Constructing a Risk Controversy: The Case of a Proposed High-Level Nuclear Waste Repository on the Skull Valley Goshute

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CONSTRUCTING A RISK CONTROVERSY: THE CASE OF A PROPOSED HIGH-LEVEL NUCLEAR WASTE REPOSITORY ON THE SKULL VALLEY GOSHUTE INDIAN RESERVATION

by

Taunya J. Jones

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE in

Sociology

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2005
ABSTRACT

Constructing a Risk Controversy: The Case of a Proposed High-Level Nuclear Waste Repository on the Skull Valley Goshute Indian Reservation

by

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Utah State University, 2005

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This thesis is a qualitative case study of a risk controversy generated by a proposal to construct a high-level nuclear waste repository on the Goshute Indian reservation in rural, northwestern Utah. Using data taken from local newspapers and public hearings, I examine and compare the claims-making activity of project opponents and project proponents. I explore and analyze variability in claims making along four specific dimensions: risk communication, trust and distrust in science and technology, environmental equity, and tribal sovereignty. My analysis is intended to illuminate the sources of contention between opponent and proponent claims-making groups in this case.

(133 pages)
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Taunya J. Jones
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CHAPTER I
INTRODUCTION

The management and safe disposal of hazardous waste is increasingly one of the most serious challenges confronting our nation today. More than 270 million tons of hazardous waste is generated in the United States every year (Murdock et al. 1999). Most of the waste is in the form of spent nuclear fuel rods, no longer fissionable, but still highly radioactive (Kraft, Rosa, and Dunlap 1993). As of 2001, 77,000 metric tons of spent nuclear waste was in need of permanent storage (KUED 2002). On-site storage space for the waste is quickly running out, however. Moreover, though the future of the nuclear power industry appeared quite dismal a couple of decades ago, the industry has been revitalized in recent years, resulting in an even greater need for a permanent waste disposal plan (Kraft et al. 1993; McCutcheon 2002). In an effort to contend with this reality, the Department of Energy has actively pursued the development of a permanent repository since the passage of the Nuclear Waste Policy Act of 1982 (NWPA). As of yet, however, no significant progress has been made towards this goal (Murdock 1999; Vedoia 2001).

The policy failure associated with hazardous waste disposal can be attributed to both technical and sociopolitical difficulties, although the latter has proven to be the most intractable. As noted by Krannich and Albrecht (1995), "[w]hile research has led to improved solutions to the technological problems of waste disposal, the human dimensions of the problem not only have not been solved but, if anything, have become more difficult" (p. 437). Efforts by government and industry to site hazardous waste facilities have met
with intense and widespread public opposition stemming from fears and health and safety concerns about hazardous waste management, distrust in technology and management agencies, and perceived inequities in the distribution of environmental risks. In short, hazardous waste management has come to be characterized by political paralysis. Hence, several analysts have concluded that insofar as public acceptability is an important determinant of hazardous waste policy, a greater understanding of public perceptions and responses to siting processes will prove to be crucial in future management decisions (Kraft et al. 1993; Krannich and Albrecht 1995; Murdock et al. 1999).

In response to the policy gridlock currently confronting hazardous waste management and disposal, agencies responsible for waste disposal have begun to target American Indian reservations as potential sites for storage facilities. The unique geographic, political, and economic situation on reservations renders them particularly vulnerable to the hazardous waste industry. Reservations are typically remotely located and socially, politically, and economically isolated. Furthermore, they tend to be economically disadvantaged, suffering from severe poverty, chronic unemployment, and a lack of opportunities for economic development (Albrecht et al. 2000; Laduke 1999; Leonard 1997). In this context, hazardous waste facilities are often perceived by tribal members as more of an opportunity than a threat. Nonetheless, efforts to site waste facilities on reservations have proven to generate the same type of public opposition that has occurred elsewhere.

The siting of hazardous waste facilities on American Indian lands represents a unique sociological context characterized by “opportunity-threat impacts” (Gramling and Freudenburg 1992) of environmental risk. It demonstrates how context-specific social,
political, and economic factors can interact to produce conflicting perceptions and attitudes towards a proposed hazardous waste facility. Moreover, it produces fertile ground for political controversy shaped by opponent and proponent claims-making activity and presents a unique opportunity for studying the social construction of risk situations.

Statement of the Problem and Purpose of the Study

In December of 1996, the Skull Valley Band of the Goshute Indian tribe signed a lease agreement with Private Fuel Storage (PFS) allowing for the storage of up to 40 thousand metric tons of high-level nuclear waste on their reservation, located in Tooele County, Utah. The proposed project has generated a great deal of controversy throughout the state and particularly among tribal members, giving rise to divergent perspectives and variability in how the issue is framed. Specifically, the controversy is characterized by a division between project opponents who perceive the facility as a substantial risk and a threat to existing social and cultural systems, and project proponents who perceive the facility as an economic benefit and/or necessity. The situation thus exemplifies the opportunity-threat context discussed above. Although the project is currently pending approval by the Nuclear Regulatory Commission, it has been delayed indefinitely as the result of numerous lawsuits and counter-lawsuits that have been filed by various stakeholder groups. Hence, the conflict surrounding this case has produced precisely the type of political stalemate that has become a defining characteristic of hazardous waste management.

In examining this specific case of environmental conflict, this study will employ a social constructionist perspective, according to which the meaning of environmental risks
is generated through sociopolitical processes. Specifically, it will adopt the view of Spector and Kitsuse (1973) who argue that social problems are socially constructed via definitional processes, which they refer to as claims-making activities. From this perspective then, claims-making activity is the vehicle through which problems are defined in social and political arenas and is the most appropriate topic of inquiry for researchers interested in understanding how phenomena are socially constructed. With regard to the current study, the claims-making activity being examined can be viewed as an attempt to influence or change the socially and politically accepted version of the risk situation of interest in order to impact policy in some way. According to Lidskog and Litmanen (1997:61), "a siting conflict is primarily a struggle about which definition should become accepted and spread." Uncovering and analyzing the processes by which definitions are accepted thus becomes a critical part of dealing effectively with risk-related conflict. The primary objectives of this study are to demonstrate that project opponents and proponents define the issue differently via claims-making and to identify significant points of divergence between the two groups. These objectives will be achieved through a qualitative analysis of opponent and opponent claims-making activity, which will illuminate the differential perspectives and definitions that underlie the controversy.

The analysis will focus on the issues of environmental risk, trust and distrust in technology and in government, environmental equity, and tribal sovereignty. Specifically, the study is concerned with the extent to which these concepts play into the claims-making activity under study and whether opponents and proponents convey and utilize these concepts in different ways. It is useful to view each of these four concepts as "frames," to use a term coined by Goffman in his work Frame Analysis (1974). Goffman used the
term to refer to "schemata of interpretation" or dimensions along which individuals interpret and/or present events and situations (1974:21). In this case, they represent aspects of the risk situation that claims makers emphasize in order to convey particular messages. The concept of frames, then, will be used more or less as a tool for analyzing variability in how the risk situation is presented by claims maker groups. The decision to emphasize these specific concepts was based on previous literature, the content of the data to be analyzed, and the unique social context of the case being examined, all of which would suggest that they are likely to be significant sources of variability in how this particular risk situation is being framed.

Importance of the Study

The sociopolitical difficulties associated with hazardous waste management have prompted a growing body of sociological work dedicated to furthering our understanding of the human dimensions of risk situations. Though this previous work has significantly increased our knowledge of the social processes involved in risk conflicts, our understanding of public reactions to hazardous waste projects remains somewhat limited and in some cases, inconclusive. If anything, the literature demonstrates that the social and political context of risk situations is far more complex than one would expect. This, in addition to the policy gridlock that not only continues to characterize hazardous waste management but appears to be increasing in intensity, suggests that further study is needed in this area.

An abundance of literature has been written on the social construction of risk and risk situations. It has been firmly established, at least from a sociological perspective, that
on one level, environmental risks are constructed through social processes and that divergent social constructions underlie risk-related conflicts (Fitchen, Heath, and Fessenden-Raden 1987; Hannigan 1995; Kroll-Smith, Couch, and Levine 2000). A variety of theoretical and methodological approaches have been taken in an effort to explain and expand on this notion. Theory development in this area has generally sought to conceptualize risk situations as socially constructed social problems (Hannigan 1995) or has identified dimensions along which risks are typically framed (Kubal 1998; Vaughan and Seifert 1992). In addition, much of the theoretical literature has focused on explaining the NIMBY (Not in My Backyard) syndrome as a general social trend (Bohon and Humphrey 1992; Freudenburg and Pastor 1992b). The empirical literature has been mostly quantitative and has been devoted to identifying factors that explain variation in risk perception and/or attitudes towards hazardous waste facilities (Dunlap et al. 1993; Krannich, Little, and Cramer 1993; Pijawka and Mushkatel 1991). The empirical literature has, however, also included a few qualitative case studies geared towards explaining variation in community responses to specific risk situations (Fowlkes and Mills 1987; Kroll-Smith and Couch 1990).

While each of these areas of risk research will inform this study, my analysis will proceed in somewhat of a different direction with the hope of expanding on existing knowledge and offering new insights into the area of risk-related conflict. This study seeks to focus on claims-making activity as just one part of much broader social construction processes. It will involve an in-depth qualitative analysis of the claims-making activity that has defined the risk situation of interest, allowing for a more detailed and a more explicit examination of this aspect of the social construction of risks than has
generally been undertaken in previous work. It is important to note that while this risk study should be understood within the theoretical context of social constructionism and is informed by previous studies dealing with the social construction of risk, my analysis will focus exclusively on claims-making activity.

This approach is invaluable for a number of reasons. First, it moves beyond NIMBY theorizing, which often results in the oversimplification of public opposition to hazardous waste siting and neglects other types of public responses. Rather, in light of the social context surrounding the current situation, this case will be framed and analyzed in terms of opportunity-threat impacts (Gramling and Freudenburg 1992). Secondly, it will allow for a more detailed examination and thus a greater understanding of factors (particularly trust and equity concerns) that have consistently been found in the literature to affect risk perception and public responses to hazardous waste facilities. As most analyses of these variables have either been quantitative or have been discussed outside of a social constructionist framework, it will be useful to learn more about how these concepts are employed specifically in claims-making activity. Finally, the qualitative approach taken here will foster a thorough examination of the context-specific dimensions of this particular case. The literature has demonstrated that social construction processes cannot be analyzed in a vacuum; they are better understood within a specific social, political, and economic context. Thus, a primary goal of this study is to analyze the claims-making activity in such a way as to retain as much as possible the social context in which it has occurred.

There is an additional reason why the social, political, and economic dimensions of this specific case are of particular significance. As mentioned previously, attempts to site
hazardous waste facilities on Indian reservations have become a trend in recent years and can be expected to continue given the current political climate surrounding hazardous waste management. In other words, similar versions of the controversy that has erupted in response to the siting on the Goshute reservation will likely occur elsewhere in the future. Yet little has been written about hazardous waste siting on Indian lands, and even less has been written about the social construction of such risk situations. Due to the social, political, legal, and economic status of Native American tribes, risk controversies such as that being analyzed here are unique in several important ways. In recognizing this, the current study will purposely emphasize social factors that are particularly relevant to risk conflicts involving Native American tribes, namely trust, environmental equity, and tribal sovereignty. My hope is that this study will not only illuminate the uniqueness of tribal responses to hazardous waste sitings, but that it will also reveal general insights about these concepts that will guide future research dedicated to understanding the social construction of similar risk situations.
CHAPTER II
THEORETICAL ORIENTATION AND REVIEW OF THE LITERATURE

This chapter serves two primary purposes. The first is to provide a basic overview of social constructionism in order to establish a general theoretical framework for my analysis. The second is to review the theoretical and empirical literature that has been written on the social construction of risk and related areas, establishing a context for the current study. In the first section, I provide a general theoretical orientation of the social constructionist approach. The second section expands on the first to explore how social constructionism has generally been employed in sociological analyses of social problems. This section is intended to demonstrate how social constructionist approaches to the study of social problems laid the groundwork for subsequent theorizing about environmental problems. In the third section, I describe social constructionist approaches within environmental sociology, which I have divided into two broad areas: social construction of nature and environmental claims-making. My focus is on the latter of these as it is particularly relevant to this study. The subsection on environmental-claims-making establishes a theoretical framework for analyzing the social construction of environmental problems. The final subsection focuses more narrowly on the social construction of a specific type of environmental problem, namely environmental risk. This section reviews what has been written about variability in risk perception and in risk-related claims-making. The final three sections are devoted to identifying and exploring three specific factors that have been found to contribute to variability in risk perception and/or claims-
making and are pertinent within the context of this study: public trust/distrust, environmental equity, and tribal sovereignty.

*An Overview of Social Constructionism*

Social constructionism is a general theoretical approach grounded in the sociology of knowledge. It aims to achieve an understanding of what we know and how we know it, and it is particularly geared towards identifying social determinants of knowledge. Constructionist ideas first appeared in early sociological critiques of science that sought to reveal the previously unrecognized subjectivity of scientific inquiry (Gergen 1999). In *Ideology and Utopia*, Karl Mannheim (1929) suggests that scientists' theoretical orientations have social origins and that scientific knowledge is a product of social processes. Similarly, George Gurvitch (1971) argues that scientific knowledge originates within particular communities with particular frameworks of understanding. Perhaps the most influential constructionist analysis of scientific knowledge is Thomas Kuhn's *The Structure of Scientific Revolutions* (1962). In it, Kuhn challenges the presumption that science can reveal absolute truth. He posits that scientific communities work within paradigms and that objectivity exists only insofar as it fits within a currently accepted paradigm.

In 1966, Peter Berger and Thomas Luckmann published their pivotal book, *The Social Construction of Reality*. Like the works mentioned above, it is an attempt to explain the subjective nature of knowledge. However, unlike those mentioned above, Berger and Luckmann were interested not just in empirical knowledge but in the common sense knowledge of everyday life. In redefining the appropriate topic of study for a
sociology of knowledge, they drew heavily from the work of Alfred Schutz, who was the first theorist to focus on the "commonsense world" and on what he referred to as "common-sense thinking" (Berger and Luckmann 1966:14). Berger and Luckmann argue that "[i]t is this 'knowledge' that constitutes the fabric of meanings without which no society could exist" (p.14). In other words, as the title of their book implies, Berger and Luckmann wanted to reveal the social processes people use to construct "reality" as this reality is the very subject matter of sociological analysis.

According to Berger and Luckmann, everyday life is composed of several layers of experience, each subjective and signifying various meanings. Certain versions or interpretations of the world become dominant via social processes, eventually becoming "reality" as their subjective nature is forgotten. The social processes through which reality was created remain invisible to everyday participants and are simply taken for granted. In other words, the subjective is essentially objectified. Language and interaction allow people to achieve an intersubjective world of shared meanings, thus becoming common sense knowledge. Common knowledge is maintained and legitimized through processes of institutionalization.

These early attempts to formulate a social constructionist framework provided some of the first plausible critiques of the positivist approaches that had previously dominated sociological thought. Positivist sociology is modeled after the natural sciences and embodies the assumption that objective knowledge can be obtained through systematic observation and experiment. Social constructionism opened the door for more qualitative, flexible approaches to sociological analysis that are deemed by some more appropriate for social science. It provided an opportunity for the discovery and
understanding of social determinants of social phenomena, which were largely ignored by positivist approaches. Social constructionism gained tremendous popularity following the publication of *The Social Construction of Reality* and became a rather versatile analytical tool in sociology. What follows is a review of constructionist approaches in specific areas of sociology that are relevant to this study.

*The Social Construction of Social Problems*

During the 1970s, social constructionism gained tremendous momentum in the sociology of social problems. Several scholars, most notably Blumer (1971) and Spector and Kitsuse (1973, 1977), began to explore the possibility of conceptualizing social problems as social processes rather than as objective conditions. Their work was an attempt to challenge the traditional structural functionalist approach according to which social problems are the direct result of readily identifiable conditions that can be quantified through scientific methods (Hannigan 1995). From a social constructionist perspective, there is an important difference between a theory designed to study the existence of particular undesirable social conditions and a theory meant to capture the general processes by which particular conditions become "social problems." Both Blumer and Berger and Luckmann were interested in the latter.

In a 1971 article, Blumer rejected the structural functionalist notion that social problems are the products of objective conditions and that they result from "intrinsic malfunctioning of a society" (p. 301). Rather, he argued, social problems are "fundamentally products of collective definition" (p. 298). Blumer goes on to argue that sociologists do not simply identify and label pre-existing societal conditions as social
problems; sociologists are only able to discern social problems once they have been recognized and defined as such by society. In essence, social problems do not exist until their presence is made known through processes of collective definition. It follows then that sociological inquiry should seek to capture and explain these social processes rather than focus exclusively on what results from them.

In their 1973 article "Social Problems: A Reformulation" and in a subsequent book (1977) entitled *Constructing Social Problems* Spector and Kitsuse expand on Blumer's basic ideas in an attempt to develop a more precise and comprehensive theory for the study of social problems. Spector and Kitsuse are largely in agreement with Blumer and others writing in a similar vein (Fuller and Myers 1941; Becker 1966; Mauss 1975) in terms of their critiques of traditional theoretical approaches and their attempts to reorient the focus of social problems research. They adopt the basic premise that social problems are constructed through social processes and that traditional approaches have neglected these processes. However, they argue that these earlier works still fall short because in the end, they treat social problems as the result or the end product of social processes and thus fail to fully avoid the difficulties associated with conceptualizing social problems as objective conditions. According to Spector and Kitsuse (1977) social problems are the definitional processes themselves and not the conditions to which the definitional processes refer. The conceptualization of social problems as conditions must therefore be abandoned all together and replaced with a conceptualization of social problems as activities. In this way, much more so than the earlier works of Blumer and others, the work of Spector and Kitsuse represents a radical departure from traditional approaches
and is an attempt to develop a distinct theory of social problems that is grounded in social constructionism.

The approach taken by Spector and Kitsuse denotes a shift in the subject matter in the study of social problems. The appropriate object of study (what is seen as a social problem) becomes the particular social or constructive processes involved, which they refer to as claims-making activities. Thus, they define social problems as "the activities of individuals or groups making assertions of grievances and claims with respect to some putative conditions" (1977:75). A theory of social problems must therefore account for the "emergence, nature, and maintenance of claims-making and responding activities" (1977:76). From this perspective, the validity or factual basis of particular claims is irrelevant in analyses of social problems; that is, the existence or non-existence of a condition about which claims are made is unimportant.

It should be noted that the work of Spector and Kitsuse is directly relevant to the current study. I am adopting Spector's and Kitsuse's basic premises that claims-making activities are the appropriate topic of analysis and that they are the very definitional processes by which a condition becomes socially constructed as a social problem. From my perspective then, claims-making represents an important part of the social construction process and is of primary interest for my purposes.

The reformulation of social problems presented by Spector and Kitsuse has had far reaching research implications in the field. However, as Hannigan (1995) points out, environmental problems have largely been neglected by social problems theorists, and most attempts to apply social constructionism to the study of environmental issues have come from within the field of environmental sociology.
Social Constructionist Approaches in Environmental Sociology

Within environmental sociology, social constructionism has generally been employed in two types of analyses: 1) theoretical explanations for how social groups define nature and their relationship with nature and 2) analyses of environmental problems/conflicts as claims-making activities. The two approaches are closely related and there has not been a clear distinction between them in the literature. However they embody some important conceptual differences. The first approach is concerned with existing subjective definitions of nature itself or with biophysical "objects" and in this sense emphasizes the end result of social construction processes. The second approach represents a more direct attempt to uncover the actual processes by which subjective definitions are created and transformed. It focuses on one important aspect of the social constructions process, namely, claims-making. It is important to recognize, however, that these two perspectives interact in that socially constructed definitions are not static but are continuously changing (i.e. via claims-making activity). Thus, the way in which we as a society interact with nature also varies across time and space as our definitions of nature are transformed through claims-making activity.

Although this study is concerned primarily with environmental claims-making, both approaches are relevant. The first subsection below includes a brief discussion of the social construction of nature and is provided here in order to demonstrate, from a general theoretical perspective, that biophysical phenomena do embody subjective meanings. The second reviews the theoretical literature dealing directly with environmental claims-making. The third subsection emphasizes environmental risks, a very specific area of
environmental sociology in which both of the social constructionist approaches described above have been frequently utilized. This subsection provides a detailed theoretical overview and literature review of the social construction of risk, which includes but does not focus exclusively on claims-making.

**The Social Construction of Nature**

A constructionist approach has been advanced by some environmental sociologists as a challenge to the traditional positivist or environmental determinist approach, according to which nature is an objective reality that can be studied and understood independently from social forces. A constructionist approach holds that "nature" is subjective inasmuch as our definitions of it are products of social processes and reflections of culturally specific beliefs, values, and ideological assumptions. In other words, there is a social as well as a biophysical aspect to nature (Albrecht and Amey 1999; Bell 1998; Fine 1997; Greider and Garkovich 1994). Thus, within any given social context, competing definitions of landscapes or biophysical phenomenon exist. Furthermore, the processes by which various definitions were constructed become invisible to individual actors and are objectified through a process of "taken-for-grantedness" (Berger and Luckmann 1966; Greider and Garkovich 1994). The implication of this is that conflict inevitably emerges concerning how we should or should not interact with our natural environment.

In general, social constructionists do not deny the importance of real environmental conditions; rather they contend that the social and the biophysical interact in a dynamic way. There has been some disagreement in the literature, however, regarding
how to balance social and biophysical factors in sociological analyses. Freudenburg, Frickel, and Gramling (1995) argue that sociology has a long tradition of drawing a distinction between the social and the physical, which has often resulted in one being given primacy or the other. Even in cases where an attempt has been made to balance the importance of both sets of factors (Buttel 1986, 1987; Humphrey and Buttel 1982) the social and the physical have been conceptualized in a dualistic fashion. Freudenburg et al. (1995) instead advocate an approach that recognizes a "mutual contingency" between the social and the physical. This approach, called "conjoint constitution," acknowledges that while "physical facts" are often shaped by social construction processes, it is also true that "social facts" are often shaped by biophysical phenomenon. Freudenburg and colleagues' (1995) critique of previous social constructionist analyses is indicative of a more general trend in environmental sociology characterized by a movement away from approaches that embrace a false dichotomy between nature and culture.

*Environmental Claims-making*

The above discussion illustrates how, in a very broad sense, social constructionism has been utilized to understand and explain interactions between human societies and their natural environment. But as Hannigan (1995:36) suggests, "constructionism is not only helpful as a theoretical stance but it can also be useful as an analytic tool." Several analysts have taken this broad theoretical approach a step further to look more specifically at the processes by which socially constructed ideals are operationalized in the environmental claims-making arena in an attempt to influence broader societal definitions or social constructions. The literature on environmental claims-making is intended to
demonstrate that environmental problems are socially constructed in much the same way as other social problems. Moreover, it illustrates that there is a great deal of variability in the way that environmental problems are socially constructed or framed, which can be explained by a number of social and cultural factors. In essence, most of the literature on environmental claims-making is an attempt to extend Spector's and Kitsuse's notion of claims-making to analyses of environmental problems.

While there is an abundance of literature detailing empirical studies of the claims-making activities involved in specific environmental controversies (some of which will discussed below), there have been few attempts to develop a broad-based theoretical approach to environmental claims-making. The work of Hannigan (1995) is one notable exception. Hannigan draws heavily from Best (1989), a social problems theorist whose work was based on the ideas of Spector and Kitsuse. Hannigan contends that the social construction of environmental problems involves three key tasks: assembling, presenting, and contesting environmental claims. The first task, assembling claims, concerns the initial identification and definition of the problems, including their sources and potential solutions. When studying this aspect of the social construction process, it is important for analysts to consider where and from whom the original claims originate as well as the social, political, and economic interests of claims makers and the resources that they bring to the table. This initial phase of the claims-making process is critical as it often creates a foundation for conflict and helps shape the ensuing controversy (Vaughan and Siefert 1992).

In presenting environmental claims, Hannigan argues, the primary goals of claims makers are to "command attention" and to "legitimate their claim" (1995:45). Claims
makers utilize a variety of techniques to achieve these goals; one common tactic used is frame alignment, a process that involves situating specific claims within the context of broader public concerns. Most analyses of the frame alignment process are at least partly grounded in Goffman's (1974:21) notion of a "frame," which he defines as a "schemata of interpretation" used by individuals to "locate, perceive, identify, and label" events in their lives. According to Goffman, frames allow individuals and groups to assign meaning and organize events and to guide actions accordingly. The process of frame alignment then involves the reformulation of a particular frame used by claims makers to reflect societal values.

The issue of framing and especially frame alignment is emphasized in much of the claims-making literature, providing important insight into the influential role of differential framing in environmental controversies (Albrecht and Amey 1999; Kubal 1998; Snow et al. 1986; Vaughn and Seifert 1992). For instance, Vaughan and Siefert (1992) make the important point that identifying variability in framing may be a necessary requisite for understanding the differences in individual perceptions that underlie many policy disagreements. Additionally, Albrecht and Amey (1999) describe the frame alignment process as an attempt to "moralize" environmental controversies. They explain that attempts by claims makers to appeal to the public leads to the creation of "moral communities" that struggle to control both policy and public opinion by aligning their particular objectives with higher societal values such as democracy or equality. When this occurs, negotiations become characterized by moral objectives rather than rational discourse, thus heightening conflict and reducing the possibility of compromise.
The third task of environmental claims-making according to Hannigan is contesting claims. This refers to an ongoing process that maintains the legitimacy of a claim in order to effect legal and political change. Claims makers can always expect to be confronted with counterclaims presented by other groups and individuals representing different political, economic, and social interests and that are “equally a matter of social construction” (Bell 1998:238). Thus, as Hannigan explains, claims makers must continuously contest counterclaims and struggle to preserve their own position in the political arena.

The issue of counterclaims adds an element of complexity to the social construction of environmental problems that is addressed in more detail by Dietz, Stern, and Rycroft (1989) and by Litmanen (1996). In both of these works, the scope of analysis is broadened; they look beyond claims-making activity per se to examine environmental conflicts in their entirety as social constructions. In both cases, the authors theorize that environmental conflicts are rooted in differing definitions of the same situation and that definitions are the product of distinct values and belief systems. More specifically, Dietz et al. (1989) argue that there are four sources of environmental conflict identified in the literature, each reflecting a different type of social construction: differential knowledge, vested interest, value differences, and mistrust of expert knowledge. The way in which any particular conflict is characterized depends upon the nature of the problem being contested and the values and political interests of the claims makers. Thus, a thorough analysis of any environmental controversy may require that analysts situate claim-making activity within the broader social context from which the conflict emerges. This idea is
expressed well by Kubal (1998), who advocates a "context-sensitive approach," which looks at the cultural environment surrounding claims-making activity.

A claims-making theoretical framework has been used to examine the activities of many different claims-making groups in analyses of numerous types of environmental issues. For the purposes of this study, it is not necessary to detail the vast body of literature that exists on each of the various types of environmental claims-making. One environmental issue that has received significant attention in the claims-making literature is environmental risks. As this area of inquiry is of relevance to the study at hand, it will be the topic of the remainder of this chapter. However, it should be clarified that in the following section, I take a broad social constructionist perspective; my discussion of environmental risks extends beyond claim-making to examine community perceptions of and responses to technological risks and hazards more generally. Hence, while much of the literature reviewed focuses explicitly on claims-making, some of it deals with the social construction of risk more generally or with other aspects of the social construction process. In this way, I am conceptualizing claims-making activity as just one facet of the social construction process.

The Social Construction of Environmental Risk

From a sociological perspective, risk perception is largely subjective; it is dynamic and is influenced by a variety of social factors and by the local context in which it occurs (Fitchen et al. 1987; Hannigan 1995; Kroll-Smith et al. 2002). This is especially true in the case of technological risks and hazards, which tend to be invisible and uncertain by nature and also tend to evoke in people a sense of fear and dread (Erikson 1991; Kroll-
Litmanen (1996:528-529) has suggested that nuclear waste in particular is characterized by "interpretive flexibility," meaning that different social groups assign different meanings to it. Litmanen goes on to argue that "in the environmental conflict a material object (nuclear waste) becomes a social object." According to Kroll-Smith et al. (2002), because of the ambiguous nature of technological hazards and disasters, efforts to interpret them have tended to rely on social constructionist perspectives.

A social constructionist perspective assumes that technological and environmental risks are at least partly sociocultural constructs, that is, the meaning of risk is, to some degree, generated through social processes (Freudenburg and Pastor 1992a; Hannigan 1995; Hilgartner 1992; Renn 1992). According to this view, environmental risks do not constitute social problems until they are defined as such by social groups and institutions. This approach is an alternative to the traditional view of risk professionals that risks are purely objective phenomena (Hannigan 1995).

A constructionist approach borrows from cultural theory of risk, according to which analyses should emphasize the cultural relativity of environmental risks. For instance, Dake (1992) contends that risk debates can be viewed as negotiations between differing social and political meanings of risks representing culturally distinct sets of beliefs and values about society. The social construction of risk occurs along three dimensions—cultural biases, social relations, and behavioral strategies—that together constitute and maintain a particular way of life (Dake 1992; Douglas 1970).

As Hannigan (1995) points out, however, most sociologists assume a more moderate position than cultural theorists, maintaining that the construction of
environmental risks involves an interplay between sociocultural processes and technological analyses. Moreover, some have noted that risk theories should give adequate consideration to both individual and structural factors affecting social construction processes (Hannigan 1995; Renn 1992). Nonetheless, sociological perspectives tend to focus on the social, political, and cultural contexts within which risk definitions are framed and debated. Thus, much of the literature examines how risk disputes play out in various political arenas.

Renn (1992: 180-181) advocates the use of a "social arena metaphor" as an analytical tool for risk analysis. Renn suggests that the arena concept is meant to get at a "better understanding of the structural factors that shape interactions among social groups and influence the outcome of social conflicts over risk." According to arena theory, several arenas exist within the policy field, including legislative, judicial, scientific, and mass media arenas. All of these arenas are interrelated and can be viewed as different stages within a single, broader political arena. Each stage consists of various groups of actors seeking to influence policy decisions.

Renn argues that in applying arena theory to risk arenas, analysts should recognize that risk debates tend to revolve around two questions: What is an acceptable level of risk and how are risks distributed in society? Furthermore, analysts should consider some characteristics of risk debates that make them both unique and more complicated than other types of political debates. For instance, risk assessment is generally characterized by a great deal of scientific uncertainty and a lack of consistency, making it particularly difficult to reach consensus in policy-making. This tends to exacerbate already existing confusion and distrust among the public, complicating sociocultural definitions of risk
even further. Renn holds that arena theory can be a useful analytical tool for exploratory
studies of risk debates or for interpreting empirical data. For example, it can be used to
organize and analyze various discourses on risk, which may provide useful insight into
constraints faced by policy-makers in the risk arena.

A social constructionist approach to the study of environmental risks implies that it
is possible and necessary to identify and analyze differential definitions of particular risks
held by various social groups in order to understand sources of variability and conflict.
This has been approached in a variety of different ways. Some analysts have attempted to
identify the various dimensions along which risks can be framed (Dietz et al. 1989; Kubal
1998; Lidskog and Litmanen 1997; Vaughan and Seifert 1992). For instance, Vaughan
and Seifert (1992) argue that risk issues can be framed along three different dimensions:
scientific or economic vs. fairness frames, framing of risk consequences, and potential
gains vs. potential losses. The first dimension provides a useful tool for understanding
differences between the framing of risk issues by policy officials, who tend to center their
debates around scientific and economic factors and the lay public, who tend to focus on
questions of fairness, equity, and moral responsibility. The second dimension suggests
that there may be important differences in how groups perceive and define the at-risk
population. An additional source of variability along this dimension is that risk issues may
be framed at either the societal or the personal level. Finally, according to Vaughan and
Seifert, framing differences may occur because of different perceptions about what might
be gained or lost from a particular risk. The authors argue, for instance, that some groups
may attempt to structure their arguments in ways that maximize potential gains or
minimize potential losses.
Kubal (1998) approaches the issue of multi-dimensional framing a bit differently. He distinguishes between three types of risk-related claims. The first type of claims are claims of injustice, the content of which may include environmental injustices or human injustices. The second type, claims of identity, refers to claims that identify and define the source of the problem as well as potential solutions to the problem. Finally, claims of agency function to strengthen claims-making activity as a form of collective action. They often refer to the success of related social movements. Claims of agency are usually made in times of urgency or when claims makers are faced with severe governmental opposition.

Other literature on the social construction of risk has focused on how social groups minimize or maximize environmental risks through claims-making activity. The most notable example of this effort is the theory of the social amplification of risk, which was developed by a group of researchers in the late 1980s and which has been utilized and developed further by several analysts. The theory is, however, most commonly associated with Roger Kasperson (1992). Kasperson’s central thesis is that “events pertaining to hazards interact with psychological, social, institutional, and cultural processes in ways that can heighten or attenuate perceptions of risk and shape risk behavior” (p. 158). He explains that individuals and groups interpret risk in ways that are consistent with previous values and belief systems, but they also construct risks according to the cultural biases and rules of the larger social units and organizations that they are a part of. According to Kasperson, social construction processes can serve to either enlarge risk (amplification) or to reduce risk (attenuation). Furthermore, amplification and attenuation processes affect both the primary consequences of the risk and the secondary consequences of the risk,
which may include such things as demands for institutional and political responses, economic impacts, social disorder, and changes in risk management.

Related to the social amplification of risk are empirical studies that examine community responses to "the chronic technological disaster" (CTD), a term used to describe exposure to an environmental hazard resulting from human or technological error (Kroll-Smith and Couch 1990:4). Social scientists have distinguished technological disasters from natural disasters, asserting that the former tend to last longer, are ambiguous in the sense that they are difficult to detect and assess, and tend to generate social conflict (Cuthbertson and Nigg 1987; Kroll-Smith and Couch 1990). Community studies of technological disasters offer important insight into differential risk perception.

Kroll-Smith and Couch (1990), for example, examined the social impacts of an underground coal mine fire on the nearby community of Centralia, Pennsylvania. The fire, which erupted in 1962, burned for several years before doing any significant damage. In the mid 1970s, however, heavy concentrations of carbon monoxide gas drove several resident families from their homes and in 1981, the fire caused a cave-in, nearly taking the life of a young boy. These events triggered concern among some Centralia residents who later formed Concerned Citizens Action Group Against the Centralia Mine Fire (CC), a group dedicated to mobilizing residents in an effort to compel government action. Not all Centralia residents shared the sentiments of CC, however; many construed the group's actions as a "rejection of the community" and as "endangering the preservation of the town" (p. 79). The community quickly became divided by conflicting interpretations of the situation. Over the next few years, several more local groups formed in response to the mine fire and the conflict it was creating. But the groups themselves were
characterized by conflicting ideas about the seriousness of the problem and appropriate resolutions, thus hostilities grew stronger and divisions, deeper. Centralia remained a terribly conflict-ridden community through the mid 1980s at which point the town was almost completely vacated as most families were relocated.

Kroll-Smith and Couch describe the Centralia case as a typical community response to a CTD. They explain that CTDs generally occur in small lower or working class towns that lack the economic and political resources and structures that would allow them to respond effectively to the situation. Rather, as small, tight-knit communities, they typically rely on small, informal local groups and organizations to meet their needs and to look out for their welfare. These local organizations and structures collapse under the pressures associated with CTDs and residents are left to interpret and manage the situation on their own. The results are differential impacts and conflicting interpretations.

A similar study was conducted by Fowlkes and Mills (1987), who examined community reactions to the chemical contamination of the Love Canal landfill. The authors explain that due to the ambiguity surrounding the risk issues at Love Canal, residents were left to develop their own definitions of the situation. The result was a divided community that over time formed two opposing camps, each characterized by a distinct perception and response to the contamination problem. The first camp, referred to as “minimalists,” perceived the chemical contamination to be limited and of little or no threat to their health. The second camp, the “maximalists,” were of the opinion that the chemical contamination was widespread and posed a serious threat to their health and that of their families. The authors found that the views of both groups were based on the evidence that they saw and heard, which included their own health and that of others,
media coverage, official statements, and statements made by grassroots groups. What differentiated the groups however was the degree of credibility assigned to the various information sources as well as the inclination to seek information. Maximalists were much more likely than minimalists to seek both official and unofficial information about the contamination and were also much more likely to express feelings of distrust in traditional science and medicine.

The authors further found that the differing perceptions between the two camps could be attributed in part to different sets of cultural values and social attitudes having particularly to do with the social ties they had established during their residency at Love Canal and with their definition of home. Minimalists are described as living "encapsulated in the highly privatized worlds of their individual homes" (1987:62). They tended to be older, retired, long-time residents of Love Canal, often having employment histories with local chemical companies and related industries and having limited social ties and friendships. They also tended to express cynicism about human nature and reject notions of collective welfare and social responsibility. Maximalists, on the other hand, tended to be younger and newer to the Love Canal area. They were also more likely to have young children at home and tended to be more sociable than minimalists.

The studies by Fowlkes' and Mills' (1987) and Kroll-Smith and Couch (1990) demonstrate an important aspect of the social construction of risk— intra-community variation in risk perception and definition. The literature dealing with intra-community variation has typically looked at the variation that occurs in two types of risk situations: cases of exposure to toxic contaminants, such as that in Love Canal and in Centralia, and the siting of hazardous waste facilities. The latter of these is of particular importance for
this study. A significant portion of the literature in this area has focused specifically on local opposition to proposed waste facilities as this has become an increasingly common form of policy gridlock and has generated problems in the field of risk assessment. Public opposition has frequently been explained in terms of the so called NIMBY syndrome (Not in My Backyard) or as a part of the general trend towards widespread opposition to LULUs (Locally Unwanted Land Uses) (Bohon and Humphrey 1992; Brown and Masterson-Allen 1994; Freudenburg and Pastor 1992b). Both have been used to explain the increased difficulty associated with siting waste facilities.

This study is concerned with moving beyond explanations for local resistance to waste facilities in order to understand community support for/opposition to waste facilities as a form of intra-community variation. A social constructionist approach can be used to understand how and why proponents and opponents of such facilities frame risk issues in different ways via claims-making activity. Gramling and Freudenburg (1992) explain that in the case of risky or controversial waste facilities, a variety of social and economic impacts take place prior to any actual physical disturbances. The authors refer to these impacts as “opportunity-threat impacts” and argue that they result “from the efforts of interested parties to identify, define, and respond to the ongoing and the anticipated implications of development, whether as opportunities (to those who see the changes as positive) and/or as threats (to those who feel otherwise)” (p. 219). From this perspective, sociological analyses of proponent/opponent claims-making are really about looking at socially constructed definitions of opportunities and threats associated with a proposed facility.
Some analyses have dealt specifically with local opposition and support for proposed waste facilities, including a few empirical studies that examine intra-community variation in risk perception and/or claims-making activity associated with the siting of a particular development. For instance, Albrecht and Amey (1999) use a social constructionist approach to analyze the claims-making activity of opponents and proponents of a proposed low-level radioactive waste storage facility in Ward Valley, California. They identify three dimensions along which the arguments of the two groups can be distinguished: 1) alternative versions of the waste sources; 2) conflicting views of public health and safety risks; and 3) the differential use of a common symbol. With regard to the first dimension, opponents claimed that the facility would be used to store waste from nuclear power plants, while proponents claimed that it would be used to store medical waste. Concerning the second dimension, opponents asserted that the facility posed significant health risks, including the possible contamination of groundwater and the potential for migration of contaminated water into the Colorado River. Proponents, on the other hand, maintained that the associated risks were insignificant as the waste stream would consist mainly of rubber gloves, gowns, and other nonharmful medical supplies. Finally, the authors explain that the desert tortoise became the symbol of Ward Valley and describe how the two groups used this common symbol in different ways. Opponents argued that the facility would seriously threaten the survival of the tortoise while proponents claimed that the project may actually enhance its survival. In the end, the Ward Valley waste facility project failed. The authors contend that differential, fixed social constructions of risk situations such as that in Ward Valley are associated with the current pattern of policy failure confronting risk management.
In a similar study, Dunlap et al. (1993) examined local responses to a proposed high-level nuclear waste storage facility on the Hanford Nuclear Reservation in Washington State. They were particularly interested in comparing the attitudes of residents of the Tri-Cities area (which is located near the Hanford plutonium production plant built in the 1940s) with those of residents throughout the rest of the state. The authors predicted that residents of the Tri-Cities area would express much higher levels of support for the proposed facility than would other state residents due to the pronuclear attitude that has traditionally existed in the Hanford area. They found that although the differences between the two study groups were not as great as expected, Tri-Cities residents did in fact exhibit higher levels of support. They identify several factors that they believe contribute to the higher levels of support observed among Tri-Cities residents, including familiarity with nuclear operations, economic dependence on the Hanford nuclear plant, a perception of safety, and trust in plant operators. In this case, the unique historical and socioeconomic context that characterizes the Tri-Cities area provides valuable insight into existing variability in the risk perception of state residents.

In a third study that deals with support for and opposition to a hazardous waste facility, Krannich and Albrecht (1995) examined local attitudes towards proposed nuclear waste repositories in two settings. The first study area included several rural communities in Nevada located near the proposed high-level nuclear waste repository at Yucca Mountain and the second included residents of Boyd County, Nebraska, another rural area which had been sited for a low-level radioactive waste disposal facility. In both of the study areas, the authors found evidence of resident support for and opposition to the proposed facilities. In Boyd County, although the majority of residents (71%) expressed
opposition to the facility, more than one-fifth of residents expressed some degree of support for the project. In contrast, among Nevada residents surveyed, more than half supported the building of the proposed facility, while only 30 percent expressed opposition.

After conducting statistical analyses of the survey results, the authors concluded that differences between resident attitudes could be attributed to a number of factors, including levels of perceived health and safety risks, anticipated economic benefits, trust in agencies responsible for site selection and management, and sociodemographic variables such as age and income levels. The findings also revealed that sociodemographic factors are relatively weak predictors of respondents' attitudes but that collectively, risk perception, anticipated economic benefits, and trust levels, are very effective predictors of response patterns. The authors further concluded that the high levels of support for hazardous waste facilities that have been observed in rural areas may be a reflection of the economic difficulties typically confronting these communities.

In another study dealing with the proposed nuclear waste repository at Yucca Mountain, Krannich et al. (1993) looked at responses of six rural communities in southern Nevada. This study provides additional insight into the uniqueness of rural views of nuclear projects. They compare the six communities with regard to residents' levels of concern about harmful effects of the proposed facility and levels of support for or opposition to the proposed facility. The findings reveal that overall, rural residents are much less likely than urban residents in Nevada to express opposition to the Yucca Mountain repository. The findings of their study were compared with those of a study of Las Vegas residents' views of the Yucca Mountain project (Mushkatel, Nigg, and Pijawka
1993). The authors hypothesize that this difference may be explained in part by the economic instability that characterizes many rural areas such as those under study. The results of the study indicate that levels of support as well as levels of concern about health risks are linked with expectations about project-related economic benefits. Those communities located nearest to the proposed site and thus more likely to reap economic benefits from the project were less likely to express concern about risks and less likely to express opposition.

The findings also reveal a great deal of variability in responses across the six study areas. This variability is explained in part by a number of factors such as the above mentioned expectations about benefits as well as trust in government, perceptions of potential health effects, and respondents' number of children. As a significant amount of variation remained unaccounted for after statistical analyses were undertaken, it is probable that a number of other factors not considered in this study also contribute to the observed inter-community variation. From this, the authors conclude that future analyses of local risk perception and attitudes need to consider the unique characteristics of individual communities. While rural communities may exhibit a certain degree of uniqueness in and of themselves, important differences also exist across rural communities.

The four studies of intra-community variation in risk perception and/or construction discussed above are significant in the context of the current study for a number of reasons. First, they each distinguish between and compare perceptions and attitudes of proponents and opponents of waste repositories rather than focusing solely on local resistance. The nature of local support for LULUs is a relatively new and largely neglected topic of inquiry in sociological risk studies and requires further study if we are
to come to terms with the political difficulties associated with risk management. Second, although of the four, only the Albrecht and Amey (1999) study explicitly uses a social constructionist approach, they all illustrate the usefulness of social construction theory for risk studies by exploring differential definitions of risk situations. Finally, all four studies demonstrate the importance of taking a context-sensitive approach by considering the unique historical, social, cultural, and/or economic community factors that contribute to the risk controversy under study. The current study takes a similar approach. The remaining sections of this chapter will identify and explore three specific risk-related factors that are expected to be useful “frames” for understanding differential claims-making in the current study.

Public trust/distrust. There are two main types of public trust that play a significant role in risk situations: trust in the science and technology (referred to by some as trust in expert knowledge) associated with risk assessment and management and trust in government agencies, those charged with regulating waste facilities as well as those responsible for protecting public health and safety. While much of the literature focuses on one or the other of these forms of trust, the two are closely interrelated. Government agencies tend to rely on scientific knowledge when making risk related policy decisions, thus in reality, there is not always a clear distinction between the two forms of public trust.

While the relationship between low trust levels and heightened public concerns about technological risks has been well documented, few attempts have been made to develop an integrative theory that accounts for the existence of public mistrust. Some have hypothesized that public distrust stems from the scientific uncertainty and lack of consensus that tends to characterize the assessment and management of environmental

Others have suggested that the public has learned to distrust expert knowledge because they have realized that it is tied to political and economic interests (Dietz et al. 1989). Still others assert that public trust is associated with other societal concerns such as the need to maintain local control, equity considerations, and the guarantee of management efficiency and intervention (Pijawka and Mushkatel 1991). In taking a broader perspective, some analysts have suggested that public distrust associated with risk management is indicative of a more general decline in public trust of government institutions (Kasperon et al. 1992; Pijawka and Mushkatel 1991).

Freudenburg's (1993) notion of “risk and recreancy” provides further insight into issues of public trust as they relate to risk situations. In introducing this concept, he seeks to broaden the field of inquiry by asking “not just about the individual perceivers, nor about the risks they perceive, but also about the larger institutional context within which the risks are managed” (1993:910). In short, recreancy refers to the failure of societal institutions to carry out their responsibilities as expected. Hence, in the case of technological risks, it refers to the failure of risk experts and governmental institutions to minimize risk and to protect public health and safety. Freudenburg explains that as the division of labor in society becomes more complex, it becomes easier for “important responsibilities [to] fall through the institutional cracks” (1993:915). Recreancy thus becomes an increasingly evident problem in complex societies such as ours. From this perspective, public distrust is not so much an emotional reaction to fear and uncertainty as it is a prudent response to an actual lack of institutional trustworthiness.
Freudenberg’s theory resembles a political economy theoretical approach to modern environmental problems. As Cable and Cable (1995) explain, according to the political economy perspective, environmental issues and conflicts must be analyzed within a broad social structural framework. Environmental policy decisions (like all policy decisions) reflect the distribution of power in society and are thus tied directly to the maintenance of powerful governmental and economic institutions. Hence, policy decisions regarding the management of hazardous waste, for instance, will fail to serve or to protect the public insofar as these functions conflict with the interest of powerful social institutions, in which case, public distrust is fully justified (Cable and Cable 1995).

For my purposes, it is not as important to explain why public distrust exists as it is to establish that it does exist and that it contributes to differential views and definitions of risk situations. The empirical literature demonstrates that a strong link exists between public trust issues and risk perception. More specifically, distrust in science and technology and in government institutions is strongly related to increased concerns about technological risks and to local opposition to hazardous waste facilities.

In each of the four studies looking at intra-community variation in risk perception discussed in the previous section, trust was found to be a significant determinant of attitudes toward the proposed waste facility. In the case of Ward Valley, Albrecht and Amey (1999:754) found that “a pervasive lack of trust” in industry and government was a primary reason for opposition to the project. In the Hanford case, Dunlap et al. (1993) determined that a perception of safety and trust in plant operators were two factors that contributed to Tri-Cities residents' high levels of support for the project. In addition, they found that faith in science and technology and trust in the Department of Energy (the
agency responsible for carrying out the proposed project) were indicators of prorepository attitudes with the inverse also being the case. The Krannich and Albrecht (1995) study of Nevada and Boyd County, Nebraska residents revealed that in both study areas, levels of trust in responsible agencies was found to be a significant factor distinguishing residents opposing and residents supporting the proposed projects. Finally, the study by Krannich et al. (1993) of rural attitudes towards the Yucca Mountain nuclear waste repository revealed that low levels of trust in science and in the federal government were correlated with high levels of concern and opposition.

In yet another study of the proposed repository at Yucca Mountain, Pijawka and Mushkatel (1991) look at the attitudes of urban residents in Nevada. The authors analyzed three surveys designed to measure public trust along several dimensions in relation to public perceptions of the facility. Specifically, they measured public trust in various general government institutions such as congress, the legislature, and city and county governments as well as public trust in specific agencies, such as the Department of Energy and the Nuclear Regulatory Commission. They then measured the effects of these dimensions of trust on risk perception. Their analysis clearly demonstrates that low levels of trust are associated with high levels of concern about risks. Conversely, high levels of trust are associated with lower levels of concern. The relationship was particularly strong with regard to trust in federal government and federal agencies. Only a moderate level of association was found between risk perception and trust in state and local government. The authors hypothesize that this may reflect state and local agencies' opposition to the project, which is seen as a credible position by a significant portion of residents.
In a final study that illustrates the importance of trust in risk situations, Murdock et al. (1999) examine variations in residents' and leaders' levels of acceptance or resistance to hazardous waste facilities. They compare responses from members of four types of communities: waste operating, waste siting, nonwaste development, and control communities. Although they analyze many different factors in relation to community acceptance and resistance, only those related to trust will be discussed here. The authors found that in all types of communities, leaders were more likely than residents to express high levels of confidence in technology and higher levels of trust in government. In addition, and perhaps most importantly in the context of this study, their analysis revealed that in general, those expressing higher levels of trust in government and higher levels of confidence in technology were more likely to express favorability towards siting a hazardous waste facility in or near their community. Moreover, among residents, higher levels of perceived risk were associated with lower levels of trust in government and lower levels of confidence in technology.

Although the literature is lacking for analyses dealing directly with the role of public trust and distrust in claims-making activity per se, it does clearly demonstrate that trust levels are a significant factor affecting variability in risk perception. Moreover, trust and distrust have been found to be crucial determinants of opposition to and support for hazardous waste facilities. One can infer from this that trust is an important variable to be considered in analyses of risk-related claims-making and deserves further attention in this context.

*Environmental equity.* The sociological literature dealing with environmental equity issues has generally proceeded in two directions. The first has focused on
identifying social characteristics of communities near hazardous waste sites in an effort to
demonstrate that there is an association between certain variables such as race and class
and environmental risks. The second has focused on analyses of the opposition of socially
disadvantaged groups to hazardous waste facilities and other environmental risks that
threaten their communities. This type of opposition has frequently been analyzed within
the broader framework of the environmental justice movement. Both areas are important
within the context of the current study. The first area of research has provided empirical
evidence for the existence of environmental inequities, defined as an association between
race and class and environmental risk, therefore identifying environmental equity as a
significant factor affecting risk management. The second area has served to establish
somewhat of an analytical framework for assessing claims-making activity by communities
affected by real or perceived environmental inequities.

The literature consistently refers to three key studies as the impetus for further
inquiry into the inequitable distribution of environmental risks and hazards (Szasz and
Meuser 1997). The first study, conducted by the General Accounting Office in the early
1980s, looked at the demographics of communities surrounding four hazardous waste
facilities in the Southeast and found that three of them were located in predominantly
African-American communities (U.S. General Accounting Office 1983). In a national
study, the United Church of Christ's Commission for Racial Justice compared ZIP codes
having one or more hazardous waste facilities with ZIP codes with no hazardous waste
facilities. They found that ZIP codes having one such facility had twice the minority
population as those with no facilities. In addition, ZIP codes with more than one facility
or with one of the five largest in the country had the highest minority populations (United
Church of Christ Commission for Racial Justice 1987). In a third pivotal study, Bullard (1983) found that in Houston, Texas, 21 of 25 solid waste facilities were located in predominantly African-American communities.

These early studies "foregrounded race as the main, if not the only, inequality of real interest," giving rise to the now common term "environmental racism" (Szasz and Meuser 1997:101). As a result, the 1990s produced a multitude of studies looking at environmental inequality, many of them serving to reinforce the view that race is the primary predictor of the existence of hazardous waste sites (Bullard 1993; Lee 1993; Mohai and Bryant 1992). However, as research progressed, scholars began to recognize that an overemphasis on race produces analyses of environmental inequality that are perhaps overly simplistic as race interacts with other variables such as income levels, education levels, and political influence. More recent studies have therefore attempted to capture the complexity of environmental inequality by conceptualizing socioeconomic status more broadly to include social class indicators in their analyses (2001) or by seeking to uncover the sociohistorical processes that generate environmental inequalities (Krieg 1995; Pellow 2000; Szasz and Meuser 2000).

Currently, it is generally accepted that "environmental inequality formation" (Pellow 2000) is a complex process requiring the examination of multiple indicators, including the economic character of the area under study as well as the income level, education level, poverty rate, and employment rate of residents (Szasz and Meuser 1997). Moreover, a thorough understanding of particular cases of environmental quality necessitates an examination of an area's unique social and historical background (Pellow 2000; Szasz and Meuser 1997). Additionally, it is now understood that environmental
inequities refer to any disproportionate distribution of environmental risks and hazards negatively affecting any one particular group of people, whether that group is defined according to race, ethnicity, class, geographic location, or another variable.

Over the past couple of decades, a heightened public awareness of the inequitable distribution of environmental risks in addition to a general increase in public risk perception has generated widespread local resistance to hazardous waste facilities by affected minority communities. This resistance has been described by many as a new social movement commonly referred to as the environmental justice movement (Bryant 1995; Bullard 1993; Novotny 1998; Szasz 1995). The environmental justice movement is a conglomeration of grassroots environmental groups "actively fighting environmental threats in their communities and raising the call for environmental justice" (Bullard 1993:24). A basic tenant of the movement is that environmental problems are directly linked with social issues (Bullard 1993; Novotny 1998; Szasz 1995). As Novotny (1998) explains, "environmental hazards, economic impoverishment, and racial discrimination are not considered separate in the environmental justice movement" (p. 138). Thus, opposition to waste-facility siting by environmental justice groups, for example, can be viewed as a struggle to achieve a much broader form of social equity.

There is a wealth of literature that describes and/or analyzes the environmental justice movement (discussed above) as a whole as well as numerous studies that examine the mobilization of specific environmental justice groups in response to environmental threats (Bailey, Faupel, and Gundlack 1993; Bullard 1993; Bullard and Wright 1992; Checker 2002; Hines 2001). In general, however, the literature has failed to establish a link between social constructionism and the movement or the activities of environmental
justice groups. In their theoretical discussions of framing, Kubal (1998) and Vaughan and Seifert (1992) each identify equity as a possible dimension along which risk issues might be framed (discussed briefly in a previous section). In addition, a few studies of environmental justice groups have presented and analyzed the activities and discourses of group members as claims-making (Checker 2002; Hines 2001). However, two works by Taylor (2000) and Capek (1993), represent the only direct attempts to take a social constructionist approach to the environmental justice movement and analyze the activities of environmental justice groups as claims-making processes.

According to Capek (1993:5-6), “a social constructionist perspective is particularly useful for understanding the emergence of an environmental justice frame and its mobilizing power in the environmental movement.” Groups and individuals participating in the movement adopt the concept of environmental justice as a “conceptual construction” or “interpretive frame” for making sense of their particular situation.” Capek contends that the environmental justice frame consists of five components: 1) the right to accurate information; 2) a prompt and unbiased hearing when claims are made; 3) democratic participation in future decision-making affecting the claimants' environment; 4) the right to compensation from parties who have inflicted harm; and 5) a call to abolish environmental racism. Although these five components may not be equally relevant in all risk situations, Capek’s model provides a basic framework for organizing and analyzing environmental justice claims-making.

The author employs this model in analyzing the case of Texarkana, a community on the border of Texas and Arkansas, that was discovered to be seriously contaminated and declared a Superfund site in the early 1980s. The contamination sources were
numerous and included a nearby controversial landfill as well as several polluting industries. In the Texarkana case, an environmental justice frame emerged, serving to organize and strengthen claims-making activity and to empower and mobilize residents in their effort to seek redress. Capek argues that a social constructionist perspective proved to be an invaluable analytic tool as it allowed her to discover how the case is unique but also how the case reflects a "general social process of frame construction" (p. 20).

Taylor's (2000) approach closely resembles Capek's but is more theoretical and broader in scope. Taylor argues that the environmental justice movement is grounded in a new social paradigm that differs fundamentally from the dominant social paradigm (DSP) and from other environmental paradigms such as the romantic environmental paradigm and the new environmental paradigm (NEP). Taylor asserts that paradigms reflect a particular group's social location and environmental experiences and influences the way that group perceives environmental issues and construct discourses. The environmental justice paradigm thus reflects the social location and environmental experiences of people of color, which differ significantly from that of whites and of mainstream environmental activists. At the core of this new paradigm is an injustice frame, a master frame which serves to link ecological concerns with social justice concerns, particularly racism and classism. Environmental justice activists tend to frame grievance around concepts such as equity, fairness, autonomy and self-determination (especially with regard to Native American communities), and civil and human rights. Taylor therefore asserts that the environmental justice movement represents a new environmental ideological framework characterized by a unique framing process, that is, the process of identifying, interpreting, and expressing social and political grievances.
Although most of the literature does not deal explicitly with variability in environmental justice framing by proponent and opponent groups, this is the primary focus of the current study. The literature does show that in cases of hazardous waste sites, environmental justice claims are typically associated with opponent claims-making. It is reasonable to assume however that environmental justice and equity enter into proponent arguments as well in the form of counter claims-making activity.

_Tribal sovereignty._ The relationship between hazardous waste and American Indian reservations is both unique and controversial. There are a variety of factors that render Native American communities particularly vulnerable to the siting of hazardous waste facilities. Reservations tend to be economically vulnerable as they are frequently characterized by chronic unemployment, poverty and a lack of opportunities for economic development (Albrecht et al. 2000; Brook 1998; Goldtooth 1995; Laduke 1999). This has led some scholars to refer to the siting of waste facilities on Indian lands as "economic blackmail" (Goldtooth 1995:144) or a "subtle type of exploitation" (Leonard 1997:653). Secondly, environmental regulations on reservations are typically lenient (Goldtooth 1995; Leonard 1997). As quasi-sovereign nations, Indian reservations are not bound by state environmental laws. In addition, the federal government has largely failed in its trust responsibility to assist Native American tribes in the development and regulation of environmental management programs. The EPA has not funded tribes' environmental programs on an equitable basis and as a result, tribal governments lag behind state government environmental infrastructure development by over 22 years (Goldtooth 1995). Finally, reservations tend to be remotely located on unwanted or unproductive land (Leonard 1997) and are socially, politically, and economically marginalized (Albrecht et al.
Native American communities generally typify what Padfield (1980: 159) has called "the expendable rural community," a term that he uses to describe small and isolated natural resource dependent communities that may have thrived at one time but that have over time experienced a loss of economic or ecological position. Ironically, the very exploitative economic processes that created these communities now contribute to their decay and to their powerlessness. Because of the unique geographic political, economic, and legal character of Indian reservations, they have been increasingly targeted by the waste industry and by government agencies confronted with policy failure regarding waste disposal and management (Albrecht et al. 2000; Leonard 1997; Lewis 1995).

The role of tribal sovereignty in relation to waste disposal and management on Indian lands has become a source of political contention. Accepted legal and political definitions of sovereignty have varied throughout history, always remaining somewhat ambiguous (Goldtooth 1995; Leonard 1997). Currently, tribal sovereignty is characterized by the concept of self-determination, according to which American Indian tribes should be afforded a great deal of independence in establishing forms of tribal government, tribal laws and regulations, and in pursuing development opportunities (Goldtooth 1995; Leonard 1997). At the same time, according to the plenary power doctrine, tribal sovereign rights are somewhat limited by the United States government as reservations are domestic dependent nations. The federal government holds a trust responsibility to tribes, which includes the responsibility of protecting the interests of tribal members (Goldtooth 1995).
The ambiguity associated with tribal sovereignty is especially pronounced in the context of environmental policy on Indian lands. With regard to the siting of hazardous waste on reservations, differing views exist about the appropriate role of sovereignty. This variation parallels Gramling and Freudenburg’s (1992) notion of opportunity-threat impacts discussed previously. For some, particularly tribal officials who find themselves and their tribes in a desperate economic situation, sovereignty is equated with the pursuance of economic development in the name of self-determination (Leonard 1997). According to this view, hazardous waste facilities represent a means of economic survival; they provide opportunities for employment and the generation of revenue (Albrecht et al. 2000; Brook 1998; Leonard 1997; Lewis 1995). Furthermore, to disallow the siting of hazardous waste facilities on reservations is to violate the doctrine of self-determination and thus threaten tribal sovereignty (Brook 1998; Leonard 1997). For others however, tribal sovereignty denotes the need to protect indigenous cultures and lands. Consequently, hazardous waste and other forms of environmental degradation may represent a threat to Native American cultures, traditions, and to tribal sovereignty itself (Albrecht et al. 2000; Goldtooth 1995; Leonard 1997). From a social constructionist perspective, these differing views of tribal sovereignty reflect different social constructions and would likely influence claims-making activities in risk controversies involving Native American Indian tribes.

A related issue that frequently enters this debate is the notion of abuse of sovereignty, also proving to be ambiguous and subject to varying interpretations. From the opponent viewpoint, the decisions of tribal councils to allow hazardous waste on their reservations conflict with tribes' interests, and can thus be seen as an abuse of sovereignty.
In addition, some see the prevalence of toxic waste on Indian lands as indicative of a violation of the federal government's trust responsibilities (Goldtooth 1995; Leonard 1997). Leonard (1997:673) has suggested that "knowing that tribes are in [a] desperate economic situation, the federal government is now using the concept of tribal sovereignty as an excuse for allowing nuclear waste to gravitate toward tribal reservations." However, from the perspective of many proponents and advocates of self-determination, "respect for Native sovereignty requires blind deference to decisions of tribal councils," and any interference into these affairs is an interference with tribes' sovereign interests (Leonard 1997:672).

In addition to recognizing variations in how tribal sovereignty is defined by different social groups, it is also important to consider how the concept of sovereignty interacts with the issues of trust and environmental equity. Given the extensive history of discrimination, exploitation, and marginalization experienced by American Indian tribes, one might expect to find amplified issues of public mistrust in Native American communities. As noted by Albrecht et al. (2000:15) "distrust and hostility is particularly evident in communities that are marginalized by broader economic, political and social forces, a set of circumstances that is clearly operative with respect to Native American people and their communities." Furthermore, trust issues may be tied to attitudes regarding the protection of tribal sovereignty (Albrecht et al. 2000) and to attitudes towards the federal and tribal governments as trustees of sovereign interests.

In addition, the debate about tribal sovereignty makes evident the dichotomous relationship that exists between tribal economic development and environmental equity issues. In light of the burgeoning environmental justice movement, the sovereignty debate
is often framed in terms of environmental equity concerns. As mentioned above, according to one perspective, sovereignty is a means of protecting tribal lands and cultures from the threat of hazardous waste. The prevalence of siting activities on Indian reservations can thus be viewed as symptomatic of the broader pattern of inequitably distributed environmental risks and as a violation of environmental justice (Albrecht et al. 2000; Brook 1998; Goldtooth 1997). On the other hand, Leonard (1997) points out that from an alternative perspective, environmental justice activists opposing hazardous waste projects on Indian lands ignore the ideas of sovereignty and self-determination, according to which tribal governments may freely pursue development projects that will sustain their tribes economically.

**Research Questions**

A primary purpose of this chapter has been to provide a theoretical foundation for understanding risk controversies such as the one of interest. It has demonstrated that risk perception is highly subjective and that environmental risk situations are socially constructed via sociopolitical processes (claims-making for example), often resulting in conflict and policy disagreement. In order to achieve an understanding of this type of conflict, it is necessary to discern the nature and the sources of variability in differential definitions of risk situations. Much of this chapter has been dedicated to describing and exploring specific variables or concepts expected to serve as significant sources of variability differentiating the claims-making activity of opponents and proponents involved in the current risk controversy. My decision to focus on the research questions listed below was based partly on themes revealed in the risk literature but was also informed by
the social, historical, and political context of the current study and by the data themselves.

The following questions will be addressed in my analysis:

*Research Question #1:* How does risk communication differ between project opponents and proponents? For my purposes, risk communication refers to any claims-making that deals with health and safety risks associated with the facility.

*Research Question #2:* How do expressions of trust/distrust differ between project opponents and proponents? Do opponents/proponents express confidence or a lack of confidence in science and technology? Do opponents/proponents express trust or distrust in the federal government, state government, and/or the Goshute tribal government?

*Research Question #3:* How do expressions of environmental equity/inequity differ between project opponents and proponents? Do opponents/proponents claim that there are inequities associated with the proposed project? For my purposes, the word inequity will refer loosely to any injustices opponents/proponents claim to exist in relation to the proposed project.

*Research Question #4:* How do the concepts of tribal sovereignty and self-determination enter into the claims-making of project opponents and proponents? Do opponents/proponents express concerns about tribal sovereignty being abused? Do opponents/proponents express concerns about tribal sovereignty being threatened?

The research question addressing risk communication can be viewed as somewhat of a measure of risk perception. Differential risk perception has, of course, been found in the literature to be an incredibly significant source of conflict in risk situations and is
clearly important in the context of the current study. My use of the term "communication" rather than "perception" is simply meant to highlight my emphasis on public claims-making, that is, expressions rather than views. Public trust/distrust and environmental equity/inequity have also continuously been found to contribute to variability in public definitions and responses to environmental risks and likely play a significant role in the current controversy. In answering questions 2 and 3 above, I am hoping to provide a richer, more detailed description of the role of trust/distrust and equity/inequity in claims-making than has typically been included in previous research. Finally, with regard to question 4, though the literature has not addressed tribal sovereignty within the context of claims-making or social constructionism, the literature does demonstrate that a significant amount of variation in perceptions/definitions of sovereignty exist. Given this reality in addition to the involvement of a Native American tribe in the risk situation of interest, I am predicting that the issue tribal sovereignty will contribute significantly to differential claims-making by project opponent and proponents in the current study.
CHAPTER III

METHODOLOGY

This chapter is divided into three sections. The first section provides a brief description of the research setting and serves to situate the controversy of interest within a specific social context. The second section describes the analytic approach that characterizes the current study. This section is intended to establish a link between the theoretical orientation and the methodological approach of this study and to demonstrate the appropriateness of both. The third section outlines the research design and includes a description of the data collection process and the coding criteria used.

Research Setting

The Skull Valley Goshute Indian Reservation is located in Tooele County, Utah, approximately 60 miles west of the Salt Lake City Metropolitan area. Situated in Utah's arid West Desert, it is a remote, largely uninhabited area that has been described as culturally and physically barren (Albrecht et al. 1999). The Skull Valley Band of the Goshute Indian tribe are descendants of the first known inhabitants of the region. Today, about two dozen tribal members live on the reservation; most of the remaining 118 or so members of the Skull Valley Band reside in neighboring communities in Tooele County and in Salt Lake City.

The current economic state of the Skull Valley reservation is grave at best. The poverty rate is three times that of the national average (Vedoia 2001) and options for economic development are minimal. The reservation has a limited natural resource base.
The nearby Stansbury Mountain range provides some resources, such as timber and game, but these resources do not serve as a form of industry for the band. Additionally, commercial gaming, which has been a source of economic growth on many Indian reservations, is not an option for the Skull Valley Band. Utah state law not only prohibits gambling but it also prohibits the 1988 Indian Gaming Regulatory Act, which in some states exempts tribal gaming operations from state laws. Currently, the only locally owned and operated business on the reservation is a small convenience store (Albrecht et al. 2000).

Efforts by the Skull Valley Goshutes to establish a commercial base on the reservation have been largely unsuccessful. In the mid 1970s, the tribe negotiated a deal with Hercules Aerospace Corporation to operate a rocket booster testing plant on the reservation. The plant was closed in 1999, however, as technological advances made it unnecessary to continue testing in remote areas. In 1994, the Skull Valley Band partnered with two environmental firms to form Envirosolutions, Inc.; the company planned to build and operate the Tooele Municipal Solid Waste Reduction & Recycling Facility on the reservation. The project failed to materialize, however, due to conflicts that arose in financial negotiations (Albrecht et al. 2000).

For the most part, the only major contemporary development projects that have endured in Skull Valley, and in Tooele County more generally, have involved hazardous waste processing and/or disposal and military weapons operations. The area has been targeted for both types of projects because of its remote location, arid climate, and vast open spaces (Wulfhorst 1997). The United States military became involved in the development of Tooele County in 1940, when it built Wendover Air Force Base in the
west part of the county. After becoming involved in WWII, the United States Army opened the Dugway Proving Grounds (DPG), which is still in operation today. DPG, also located in the West Desert region, was used as a laboratory for testing chemical and biological weaponry under field conditions. Also still in partial operation in Tooele county are the Tooele Army Depot (TAD), currently used for military vehicle and equipment maintenance and the disposal of weapons and Deseret Chemical Depot (DCD), established to store, manage, and destroy the nation's chemical weapons stockpile (Wulfhorst 1997).

Tooele County also has an extensive history with the nongovernmental hazardous waste industry. In 1987, Tooele County established the Hazardous Industries area (HIA), a zoning district specified for the siting of hazardous waste facilities. In recent years, five commercial hazardous waste facilities have operated within the HIA, including two hazardous waste landfills, two hazardous waste incinerators, and a radioactive waste landfill run by Envirocare of Utah (Wulfhorst 1997). The presence of numerous hazardous waste and weapons facilities in the Skull Valley area largely precludes the development of other types of commercial activities on the reservation. Moreover, it has led some to believe that “this region is by default, if not by designation, an environmental sacrifice zone” (Albrecht et al. 2000:28).

In an attempt to rectify the Skull Valley Band’s dire economic situation, in December of 1996, the Tribal Council entered into a lease agreement with Private Fuel Storage (PFS) to construct a Monitored Retrievable Storage (MRS) facility on reservation lands. The above ground facility would provide temporary storage for up to 40 thousand metric tons of nuclear waste in the form of spent fuel rods. The project, which is pending approval by the Nuclear Regulatory commission, has been delayed indefinitely as the result
of numerous lawsuits and counter-lawsuits that have been filed by stakeholder groups (Vedoia 2001).

The Skull Valley Band first began to consider housing the repository in the early 1990s, at which time they were solicited by the DOE’s Office of the Nuclear Waste Negotiator. According to the Nuclear Waste Policy Act of 1982, the federal government is responsible for the storage of nuclear waste produced by the nation's nuclear power plants. In the 1990s, the DOE, under the direction of the Nuclear Waste Policy Amendments Act of 1987 and under pressure from the nuclear power industry, began to explore the possibility of constructing a temporary site for the waste until a permanent site could be secured (Sachs 1996). As no state would agree to store the waste, the DOE actively solicited Native American reservations. Along with several other tribes, the Goshutes received a research grant from the DOE to investigate the feasibility of constructing the MRS facility on their reservation. In 1993, however, the program was cancelled and the DOE walked away from all negotiations (Vedoia 2001).

In response to the Department of Energy's failure to follow through with promises to handle radioactive waste materials, a consortium of eight nuclear power utilities formed under the banner of Private Fuel Storage (PFS). The expressed mission of PFS was to pick up where the federal government left off in locating a temporary site for the disposal of spent nuclear fuel rods generated by the nation’s nuclear power industry. PFS targeted several of the Indian tribes who had shown initial interest in the project by applying for research grants from the DOE, including the Skull Valley Band of Goshutes. PFS' negotiations with most of the tribal councils considering the project were terminated due to strong resistance from tribal members. PFS began to focus their efforts on Skull
Valley after failing to reach an agreement with other targeted tribes, particularly the Saux and Fox tribes of Oklahoma and the Mescalero Apache tribe of New Mexico (Kamps 2001; Vedoia 2001).

The lease agreement between PFS and the Skull Valley Band has generated a great deal of controversy both among tribal members and among Utah residents and politicians. Proponents of the project, particularly the tribal council, maintain that the facility represents a viable option for economic advancement for the tribe, when few other options exist. The facility would reportedly provide 40-50 jobs for tribal members. In addition, PFS has agreed to pay the tribe a substantial sum in mitigation fees, though the amount of those fees has not been released to the public. The tribal council has asserted its right as the governing body of a sovereign nation to pursue the project in the interests of its tribe, without deference to state laws or to opposition by state leaders.

On the other hand, opponents, including tribal members and other state residents as well as state officials, view the physical, social, and cultural risks associated with the proposed facility as outweighing potential benefits. Some tribal members view the council's decision as an abuse of sovereignty, claiming that the project conflicts with the tribe's culture and traditional heritage.

Analytic Approach

The current study assumes a social constructionist perspective, according to which definitions of reality are generated through social processes and are tied to culturally specific values, beliefs, and ideological assumptions (Berger and Luckmann 1966; Greider and Garkovich 1994). From this perspective, claims-making activity is an appropriate
subject matter for researchers interested in understanding and explaining socially constructed views of reality (Albrecht and Amey 1999; Spector and Kitsuse 1977). Within the context of this study, claims-making activity represents a vehicle with which opponent and proponent groups socially construct the risk situation being analyzed. Social constructionism is a particularly useful approach to this study, given its nature and subject matter. This perspective is not, however, without its critics. The most common criticism of social constructionism is that it denies the existence of objective conditions or real problems (Dunlap and Catton 1994; Murphy 2002). It has also been argued that by treating all claims as equally valid, social constructionist approaches are unable to contribute to sociological efforts to manage or ameliorate social and environmental problems (Dunlap and Catton 1994).

In light of these criticisms and in order to clarify how social constructionism is being utilized in this particular study, it is useful to distinguish between two varieties of this theoretical approach: radical or strict constructionism and mild constructionism (sometimes referred to as contextual constructionism). While it may be true that some strict constructionists contend that all things (material and social) are constructed, most constructionists do not adhere to this view. Rather, most constructionist analyses are of the mild variety, which presupposes that a useful distinction can be drawn between material reality and social reality (Burningham and Cooper 1999). According to mild constructionism, material reality does exist and is important in its own right; however, “it is social reality that is socially constructed in Berger's and Luckmann's sense,” and it is this reality that is of sociological interest (Sismondo 1993:522). The theoretical approach being taken here is that of mild constructionism.
Social constructionism and other related theoretical orientations (e.g., symbolic interactionism) lend themselves to qualitative methodologies (Berg 2004; Phillips and Hardy 2002). Berg (2004) explains that methodologies do not exist in a vacuum; rather they are associated with particular theoretical perspectives. "Data gathering, therefore, is not distinct from theoretical orientations. Rather, data is intricately associated with the motivation for choosing a given subject, the conduct of the study, and ultimately the analysis" (Berg 2004:4). As qualitative research is concerned with discovering context specific meanings, definitions, symbols, and descriptions of social settings, it embodies many of the assumptions underlying a social constructionist perspective and provides the most appropriate means of revealing and analyzing social construction processes.

Qualitative research has been criticized by some as being nonscientific and therefore, invalid. This criticism may arise in part from the tendency of researchers to equate science and validity with quantification (Berg 2004). As Berg (2004:11) points out, however, regardless of whether qualitative or quantitative techniques are being used, "everyone is doing science, provided that science is defined as a specific and systematic way of discovering and understanding how social realities arise, operate, and impact individuals and organizations of individuals." The position being taken here is that neither qualitative or quantitative methods are inherently more valid or more scientific. Rather, they serve different purposes and can be viewed as more or less useful depending on the goals and objectives of a particular research project. While quantitative research may be an appropriate means of counting or measuring things, qualitative research allows researchers to access things that are not quantifiable. Qualitative methods are purposely
flexible so as to allow for in-depth understandings of especially complex social settings and phenomena.

The current study is primarily concerned with the processes by which different social groups have constructed a specific situation via claims-making activity. Hence, it seeks to uncover the culturally specific definitions and meanings that contribute to differential versions of social reality, with the ultimate goal of achieving a better understanding of the conflict surrounding the specific policy issue under study. I contend that the study's objectives, as well as the uniqueness and complexity of the situation being examined, necessitate a qualitative analysis.

Given its qualitative nature, this study draws heavily from a grounded theory approach (Berg 2004; Strauss and Corbin 1990). Although, some mistakenly assume that a grounded approach is purely inductive, resulting in data that has been "molded" to fit a particular theory, it is more accurately described as an interplay between inductive and deductive reasoning (Berg 2004). As Strauss and Corbin (1990:23) explain, a grounded approach assumes that "data collection, analysis, and theory stand in reciprocal relationship with each other." In the context of this study, both the theoretical and empirical literature and the data themselves were instrumental in the development of the coding criteria and the research questions to be addressed. The literature, particularly that dealing with risk perception and the social construction of risk, identified and defined factors that have tended to significantly influence peoples' perception of and communication regarding risk situations. The data, however, were equally informative in that they revealed themes that appear to have contributed to differential perception and framing of the risk situation of interest. Though many of these themes mirror what is
found in the risk literature, some reflect the unique social, political, and cultural context of the current study.

Research Design

The current study is an ethnographic case study. It is designed to explore and describe in a systematic way the claims-making activity that characterizes a specific controversy, that of the high-level nuclear waste storage facility siting on the Skull Valley Goshute Reservation. Although it is my hope that this study will provide some general insight into the political and sociological difficulties associated with hazardous waste disposal, it is not intended to be representative of similar situations. Rather, this study is designed to capture the uniqueness and complexity of the situation being examined. In doing so, it presupposes, as others have done (Albrecht and Amey 1999; Krannich et al. 1993; Kubal 1998; Lobao 1996) that case studies of risk situations necessitate a context sensitive approach that considers the social, cultural, and economic forces unique to that situation.

This study will utilize discourse analysis as the primary method of inquiry. The discourse of claims makers will be assessed and interpreted via analysis of two types of secondary data sources: 1) transcripts from public hearings and 2) editorials and letters to the editor from local newspapers. The transcripts were taken from two public hearings conducted by the Nuclear Regulatory Commission (NRC) in accordance with their licensing procedures. The first hearing took place on April 8, 2002 in Salt Lake City and the second on April 26, 2002 in Tooele, Utah. Both of the hearings included a public comment period, providing a forum in which concerned individuals could express their
opinions and concerns to the NRC committee. The newspaper data sources included a total of 191 editorials and letters to the editor from two major local newspapers, The Salt Lake Tribune and Deseret News. These two newspapers were selected because they are the largest and most comprehensive of the local newspapers available and because they were readily accessible. The articles were collected for the period from 1992, when the public first became aware of the proposed project, to 2003, which marked the end of the data collection period.

The above two types of secondary media sources are appropriate for the type of analysis I will be conducting in this study and will provide unique insight into the discourses of the two primary groups of claims makers involved in the current risk controversy, project opponents and proponents. From my perspective, editorials and letters to the editor and public comments made at hearings represent claims-making very precisely; they represent deliberate attempts to publicly define the risk situation in such a way as to influence policy outcomes. I believe it is useful to think of this particular type of claims-making as what Kubal (1998) refers to as “front region claims.” According to Kubal (1988:543), front region claims are those “carefully constructed, mass-mediated public frames” that are “presented for universal public consumption,” distinguishable from “back regions claims” which are those “comparably ephemeral frames produced among activists” such as those produced during organized meetings and personal interviews.

The data sources used for this study were transcribed into text documents and downloaded into N6, a qualitative data analysis software package. The research team developed a coding scheme based on a combination of factors, including important themes identified in the literature, the content of the data collected, and researcher observations.
An elaborate coding scheme was utilized to allow for analyses and comparisons of a wide array of themes, including those related to economic and development issues, legal and political issues, risk and safety issues, trust issues, and equity and fairness issues. N6 allowed for the data to be categorized and coded as "Tree Nodes," which include various general and specific topical themes that reflect the coding scheme, and as "Free Nodes," which designate the data as either proponent or opponent responses. Each line of text was coded separately; however, in addition, each individual data source (each newspaper article and each public statement from the NRC hearings) was coded as either opponent or proponent, allowing for the original data sources in their full-text form to be sorted into opponent and proponent categories.

In order to ensure that the data would answer my specific questions as accurately and thoroughly as possible, I analyzed the data sources in their full-text form and conducted my own coding process. In keeping with my research questions, I conducted an open coding procedure utilizing four key concepts: risk communication, public trust/distrust, environmental equity/inequity, and tribal sovereignty. Strauss and Corbin (1990) describe open coding as a process by which the researcher categorizes information by "close examination of the data." (Boyatzis 1998:35). That is, by way of inductive reasoning, the data themselves guide the coding process to some extent. Though each of the four concepts are being defined somewhat loosely in order to facilitate a rich and thorough qualitative analysis, a description of each of these concepts is included in the analysis chapter. I read through the data sources three separate times, coding the data according to the four concepts listed above and in effect, organizing and labeling them as four separate "frames." Only data fitting in these particular frames were coded. Some
data were placed in more than one category. This was to be expected as the concepts being used are closely related. My analysis will utilize the coded data to reveal the relative importance of these four concepts in opponent and proponent claims-making and will evaluate the role that they each play in differential framing of the risk controversy under study.
CHAPTER IV

ANALYSIS

The purpose of this chapter is to describe and analyze, in a comparative manner, the claims-making activity of the opponent and proponent groups involved with the risk situation of interest. As indicated by the research questions, my analysis will compare and contrast how opponent and proponent groups conceptualized four specified topics—risk, trust/distrust, environmental equity, and tribal sovereignty as reflected in claims-making. In other words, I will examine how each group frames the risk controversy along each of these four dimensions. Analyses of frames allows us to more easily compare different versions of reality, in this case, a specific risk situation. Hence, this analysis is primarily concerned with describing and understanding variability in framing. In this case, differential framing is reflected in opponent and proponent claims-making and is evidence of the efforts of claims makers to influence and/or change socially and politically accepted definitions of the risk controversy.

The chapter is organized into four subsections, each dealing with a specific concept or frame. In each subsection, I briefly describe and provide something of a working definition of each concept. I then discuss opponent and proponent claims-making individually as it relates to that concept. Though given the nature of the data it is neither appropriate or possible to quantify claims, my analysis focuses on prominent themes and reveals significant patterns characterizing the claims-making of each group. By intention, each concept is broadly defined, allowing for an in-depth exploration of a full range of claims makers' views.
Risk Communication

Risk communication constituted a significant part of both opponent and proponent claims-making. Here, risk communication refers to claims concerning the health and safety risks associated with the proposed facility. Although risk-related claims could be defined more broadly to encompass other types of risks (cultural and economic risks for instance), this analysis will focus solely on physical risk, as it was the primary point of emphasis for both groups. Not surprisingly, opponents and proponents of the proposed repository expressed incredibly divergent views with regard to the health and safety risks associated with the proposed nuclear waste storage. While opponents tended to maximize risks, contending that the facility would pose a major physical threat to surrounding communities, proponents tended to minimize risks, claiming that the risks involved are either insignificant or nonexistent. What follows is a description of the risk-related claims most frequently advanced by each group.

Opponent Risk Communication

The central theme of opponent risk communication was that the proposed facility is simply too dangerous and perhaps more importantly, that the health and safety risks it poses outweigh its potential benefits. For instance, one opponent asserted that “[s]tate concerns about public safety, transportation risks, environmental damage, and a detrimental image as a dumping ground outweigh any real or perceived benefits” (Anonymous 1999a:AA1). Similarly, another argued that “[t]he money that would go to
the Goshutes for storing the waste is not nearly worth the risk of bringing a tremendous amount of hazardous material into the state” (Anonymous 1998a:A20).

Although opponent claims makers sometimes discussed risk and safety in rather general terms, for the most part, they were very specific about the types of health and safety risks that most concerned them. The risks most frequently mentioned by opponent claims makers were radiation exposure, risks associated with transporting the waste, the possibility of terrorist attacks, the probability of seismic activity near the proposed site, and the proximity of the site to military operations in Tooele County, which includes Hill Air Force Base and the Dugway Proving Grounds, on which much of the nation’s inventory of chemical weapons are tested, stored, and destroyed. The following statements are a sample of opponent claims regarding these five most prominent risk related concerns:

The industry claims they can contain the nuclear waste, but what if they can’t? It may release radioactivity everywhere and put many lives at risk. (Haslam 1998:A14)

Then there looms the question of transportation safety. Over the past three decades more than a dozen rail and highway accidents in this country were so severe they could have compromised the steel casks. The possibility of accidents or [terrorists] attacks puts the risk not to just Utahans, but to every American living along the transportation corridor. (NRCSLC:1659-1799)

What greater target would terrorists have than 40,000 tons of high-level nuclear waste that when released into the air will completely shut down the Wasatch Front, Hill Air Force Base, the Utah Range, Interstate 80, Salt Lake City Airport, and virtually shut down the state of Utah. (NRCSLC:351-410)

Studies show that the proposed storage site is in an area susceptible to earthquakes—big ones. If a quake hit, a new fault could break the surface almost anywhere in the area—even at the plant itself. No matter how safely the fuel rods are packaged, they likely couldn’t withstand the destructive power of an earthquake. (Anonymous 1999b:A10)

There is also a bombing range right on the west side of the Cedars that is only a few miles away…If one of these bombs, for whatever reason, gets out of control and hits the center of that site, I don’t think anybody has an idea of what kind of damage could take place. (NRCSLC:2270-2367).
Although mentioned less frequently, some opponents also expressed concerns about the possibility of soil and water contamination:

[T]he proposed site is a wilderness area. Let's leave it that way rather than gouging Mother Earth and possibly contaminating soil, water tables, plants and animals. (NRCToele:98-276).

Groundwater would become contaminated, and with this kind of thing, cleanup would be impossible. (NRCToele:2121-2226)

Several opponents supplemented their statements about these specific risks with claims that the agencies charged with ensuring the safety of the project (particularly the Nuclear Regulatory Commission and Private Fuel Storage) had not given adequate consideration to nor demonstrated preparedness for the risks involved. Concerns about a lack of readiness for terrorist attacks in light of the 9/11 tragedy were especially pronounced:

[T]hese proposed storage containers and storage sites represent a relative soft target for actions of potential adversaries. The events of September 11th clearly demonstrate the unpredictable world we live in and the lack of foresight of so-called experts. (NRCToele: 1621-1665).

In making risk claims, opponents frequently related their health and safety concerns to personal experiences they had had with what they perceive to be similar risk situations. This was especially true for claims makers discussing concerns about radiation exposure. For instance, many opponents claimed to have witnessed the health effects of the radioactive fallout that occurred in connection with nuclear weapons testing at the Nevada Test Site and expressed fears about a reoccurrence of this type of radiation exposure. For example, one opponent expressed her concerns about radiation to the NRC in the following way:
I would tonight like to say something about a small group of us who were raised in southern Utah during the 50s. We’re referred to as “downwinders,” a nice little title....My father is dead from bone cancer. My aunt is dead from ovarian cancer. Another aunt is dead of stomach cancer. My uncle is dead from pancreatic cancer. I have a cousin with lymphoma. I have a cousin with leukemia. I have a sister with a severely compromised immune system. I have a cousin with breast cancer. And her daughter, who is 18 years old, has lymphoma. This is the product of nuclear radiation. It is the product of, I agree, above ground testing, but it is also the product of what happens when you don’t know exactly what might happen. (NRCTooele:2319-2328)

A few opponent claims makers associated their concerns with personal knowledge of and/or experience working with nuclear waste. As one man explains:

Having worked at the Hanford Nuclear Facility in Washington for several years, where the nuclear waste is now leaking into the Columbia River, I can categorically state that even the safest storage techniques caused many sleepless nights for the scientists at this advanced facility. (Rosetti 1999:A10)

Claims such as these indicate that many opponents’ risk perceptions and risk communication about the current situation were shaped partly by their life experiences with environmental risk and hazards. This demonstrates how previously held social constructions of risks can manifest themselves in the claims-making process.

Another message that proved to be a prominent part of opponent risk communication was an expressed desire to protect family members, especially children and grandchildren, and an unwillingness to accept anything that may jeopardize the health and lives of family members. Some also asserted a need to protect the health and safety of generations yet to come. In making a plea to the NRC, one woman stated, “I beg you to save our children, grandchildren, and our descendants from this pollution that we don’t have to store” (NRCSLC:81-241).

Though the above-mentioned health and safety concerns are interesting and informative in and of themselves, the manner in which they were presented is, in ways, equally revealing. It was not uncommon for opponents to couch their risk claims in very
definitive terms, as if to suggest that the proposed facility would bring inevitable harm and injury. In this way, opponents rhetorically transformed potential risks into certain tragedies. The following examples illustrate this tendency:

[The] imported waste...will eventually harm all Utahns unless we act to protect ourselves. (italics mine, Durkson 1994:A7)

There will be a Chernobyl-like disaster in central Utah, or worse unless the citizens become very vocal and actively block the granting of a license. (italics mine, Faux 1997:AA2)

An accidental disaster is not a possibility, it is virtually a statistical certainty. (NRCToole:1061-1191)

**Proponent Risk Communication**

Generally speaking, the primary message conveyed by proponents was that the proposed facility is safe and relatively risk-free. Most proponent risk communication signified an attempt to minimize the risks associated with the project. Claims-making included some very general statements to this effect:

The real risk of this whole nuclear waste issue is very, very, very small, almost nonexistent. (Rex 1997:A14)

This is likely one of the least risky industrial ventures the Skull Valley Goshutes could take on. (Northard 1997a:A14)

The Skull Valley project will be developed using proven, safe technology. (Ward 1997:AA2)

For the most part, however, proponent risk claims were advanced in direct response to claims made by project opponents. Hence, a significant part of proponent risk communication was devoted to minimizing the specific health and safety concerns most frequently expressed by opponents, such as transportation accidents and terrorist attacks. The following are some examples of risk-related counter-claims advanced by proponents:
As for the transportation issues, the spent fuel would be transported in the most rugged shipping containers ever designed—proven to withstand jet fuel fires, immersion in water, and collisions at speeds greater than 80 miles per hour. (Ward 1997:AA2)

If terrorism is a serious issue, then why would it be so much safer to leave the fuel storage canisters in their present sites, well over 100 distributed sites across the United States...it makes imminently more sense to centralize the casks in a location where it can be better protected. (NRCSLC:1324-1436)

Spent nuclear fuel casks will not present a radiation hazard to the general population during transportation...one would have to hug one of those spent fuel storage casks tightly for 10 to 15 hours to get the same amount of radiation he would get from a normal medical X-ray. (NRCSLC:2032-2170)

Even an earthquake that shakes the ground would not endanger Utahns from storage of this properly contained and solidified material. (Johnson 1999:A16)

Proponent claims makers also countered opponent risk claims with suggestions that the fears and concerns of opponents are unfounded or even irrational. These types of counter-claims took a variety of forms. Some claims makers argued that opponent risk claims should be discounted because they are without any scientific basis:

[S]ome people are afraid of radiation...the majority have reason to be afraid of radiation, but the reasons for that fear are not scientific reasons. The people have been told false statements, and through misinformation, they have come to fear radiation. (NRCTooele: 1441-1553)

Radiation has been given a bad name and is not as harmful as people think....there are antinuclear people who get emotional about it, and I think most of this antinuclear movement is an emotional movement rather than a scientific movement. (NRCTooele: 1596-1611)

I hear a lot of fear, fear in a lot of these people’s voices. Now if they’d educate themselves, maybe that fear would lessen” (NRCTooele:703-860).

Some proponents instead suggested that opponent risk communication reflects a discrepancy in people’s risk perception. For instance, some pointed out that it is contradictory for Tooele County residents to express concerns about the proposed PFS facility after having lived near numerous other hazardous facilities for decades. Others argued that opposition to the proposed facility is inconsistent with opponent attitudes
towards similar types of risks. As one proponent stated, "These same people (project opponents) freely use medical X-rays, medical radioactive isotope tracers, radiation treatment for cancers, and radioactive components in smoke alarms..." (Barrowes 1999:A18). Still other proponents asserted that opponent concerns are the result of "fear tactics" and "inflated rhetoric" espoused by politicians, political activists, and the media. All of these examples represent attempts to thwart the effectiveness of opponents' risk communication by invalidating their risk claims.

In addition to a prevalence of counter-claims designed to minimize specific risks, a considerable amount of proponent risk communication dealt with nuclear fuel more generally and was devoted to maintaining the safety and cleanliness of nuclear fuel processing, storage, and waste disposal. The following examples illustrate this theme:

[N]uclear power is the safest enterprise in the country. (NRCTooele:334-474)

[The nuclear power industry has] a safety record that is the envy of other industries. (Barrowes 2000a:AA5)

Nuclear energy has a very good safety record. Not one person has been killed by a radiation accident from the U.S. nuclear power industry. (NRCTooele:739-828)

Many proponents compared nuclear fuel with other energy sources, particularly coal, arguing that nuclear power is a much cleaner, safer, and less polluting alternative. Some even suggested that in replacing conventional energy sources, the nuclear power industry has served to restore environmental conditions. As one proponent contended:

Nuclear power provides 20 percent of our nation's electricity in a safe and reliable fashion that helps keep our air and water clean. Without nuclear power, the United States will not be able to meet its commitment to reduce greenhouse gases and prevent global climate change. (Northard 1999a:A14.)

In promoting the safety of nuclear power, a few claims makers tried to boost their claims with personal knowledge they had acquired while working in the nuclear power industry:
I spent 33 years working in the nuclear energy field, with 23 of those years in the commercial nuclear power industry. Spent nuclear fuel casks will not present a radiation hazard to the general population during transportation of the cask. I have a much greater concern for the radiation in our homes along the Wasatch Front in the form of radon gas than I would to have a spent nuclear cask sitting on the lot next to mine. (NRCSLC:2032-2170)

The above examples demonstrate an effort by proponents to portray the nuclear power industry as beneficial to society. Proponent claims-making regarding the safe, clean nature of nuclear fuel can be interpreted as an attempt to maximize the benefits associated with the proposed facility, an interesting contrast to opponent risk claims, which had the effect of minimizing benefits and maximizing risks.

*Expressions of Trust and Distrust*

This section compares opponent and proponent expressions of trust and distrust. My research questions emphasize trust/distrust in government and in science and technology, as these specific areas have been found to be significant in previous risk studies and are expected to play an important role in the claims-making activity being examined here. Government, in this case, refers to tribal, state, and federal government agencies and officials, as each has had some type of involvement in the project. Opponent and proponent claims-making related to each of these three levels of government will be looked at separately. Although my focus is on trust issues related to government and to science and technology, the research questions have also been framed somewhat ambiguously so as to allow me to discover and discuss unanticipated themes related to trust. Hence trust/distrust in this context really refers to expressions of confidence or a
lack of confidence in participants somehow involved with this risk controversy or in any other aspects of the situation.

**Opponent Expressions of Trust and Distrust**

In general, themes related to trust and distrust play a much more prominent role in opponent claims-making than in proponent claims-making. This was especially true of trust issues relating to government agencies. Perhaps more than anything, opponent claims makers consistently expressed high levels of distrust in the federal government. Opponent expressions of distrust referred both to the federal government as a whole and to specific federal agencies with some involvement in the proposed facility. In general references to the federal government, opponents frequently claimed that, historically, the federal government has demonstrated a tendency towards dishonesty and deceit, often citing particular instances in which the federal government has previously lied to, mislead, or manipulated the public in risk situations. For example, in an editorial entitled “Learning From a Toxic Legacy,” one opponent wrote in reference to the nuclear weapons testing that took place during the Cold War:

> It is hard to justify the deliberate lies that allowed the federal government to literally sacrifice the health of thousands of unsuspecting Utahns and Nevadans in the name of victory....In the eight part series that ends today, the Deseret News has catalogued this history of deceit, which ultimately led to a legacy of death, poison, and contamination in Utah....Along with [this legacy], quite naturally, comes a legacy of mistrust. Many Utahns believe a government that told deadly lies once may very well do so again. (Anonymous 2001a:AA1)

Regarding specific federal governmental agencies, the two bodies that were most frequently the topic of opponents’ expressions of distrust were the Nuclear Regulatory Commission (NRC) and the Bureau of Indian Affairs (BIA). Often, claims makers
directed their claims to the NRC board directly, as a great deal of the claims-making occurred during public hearings held by the Commission. The most common expressions of distrust in the NRC were that the agency had not adequately considered all the risks involved, that the Environmental Impact Statement completed by the NRC was biased and inadequate, that the NRC would not seriously consider public input when making decisions, and that the Commission favors the nuclear power industry over the public. As one opponent asserted:

The Nuclear Regulatory Commission and the other three agencies that have approval power over the project have already, for all intents and purposes, caved to PFS and the nuclear industry. That should come as no surprise. The NRC has never actually denied a license application (requested by the industry) except in one case...the NRC represents and promotes the industry with far more vigor than it regulates it. (Erickson 2000:AA2)

Opponents also expressed a great deal of distrust in the BIA, most often claiming that the agency has failed in their trust responsibilities towards the Goshute tribe by not looking out for tribal members’ best interests and/or for inappropriately interfering in tribal affairs as they relate to the PFS project. One woman explains to the NRC board

The BIA has made unlawful decisions and confirmations concerning tribal internal matters whereupon other agencies, financial institutions, this board (the NRC), and the state entities in making their decisions or ruling tram. The BIA has no authority to interfere in tribal elections or other internal affairs in the tribe. The BIA has unlawfully recognized an unauthorized Goshute executive committee, and this purported committee has misrepresented conditions on the Skull Valley Goshute Reservation to the NRC. (NRCTooele:98-276)

In addition to expressions of distrust in the federal government, opponents also voiced concerns about the integrity and the trustworthiness of the Skull Valley Goshute tribal council. Some claims makers argued that the tribal council is dishonest, manipulative, or corrupt and that their decisions have not been based on the tribe’s best interests. A few asserted that tribal council members had abused their positions of power
by violating tribal regulations and/or manipulating traditional tribal government procedures to secure the PFS facility and ensure their own economic gain. Some even claimed that council members were bribed to sign the lease with PFS. Other opponents contended that the tribal government is not responsible enough, not educated enough, not experienced enough, or otherwise incapable of safely and effectively managing a nuclear waste repository such as the one being proposed. According to one gentleman, "[t]he tribal government and the people of Skull Valley... don't have bachelors degrees or associate degrees, nor have education and experience in a nuclear facility, and they cannot handle this type of waste" (NRCSLC; 2270-2367). A few opponents boosted their claims with allegations that the tribal government has a poor environmental record:

[T]he Skull Valley Goshutes have been in violation of the federal Safe Drinking Water Act for years. The water quality was contaminated with surface water containing e coli, fecal and other organisms.... The tribe has also had an open dump for years. The soil contamination will have an enormous environmental impact on aquatic ecosystems in the future. If a sovereign Indian tribe cannot clean up its own environmental problems within its jurisdiction, how can the tribe take care of 4,000 metric tons of high-level nuclear waste and guarantee the safety of its people? (Allen 2002:AA7).

On the other hand, opponents tended to express trust rather than distrust in state government and more specifically, in state officials. Opponent claims makers exhibited a high degree of faith in the willingness and ability of state officials to recognize and act in accordance with Utah residents’ best interests, which in this case, amounts to opposition to the proposed facility. Opponents were especially inclined to recognize one official in particular, Mike Leavitt, Utah’s governor at the time, often calling on Utah residents to actively support their governor. The following are examples of this type of claims-making:
For much of his tenure as governor, Mike Leavitt has been a lone government voice against putting a nuclear waste storage facility in Utah. Now he has the Legislature on his side, forming a united front that can only benefit state residents. (Anonymous 1998b:AA1)

Mike Leavitt is determined to keep nuclear waste from being shipped to Utah…. Utahns should staunchly support the governor in that action and his use of whatever legal means are at his disposal to accomplish it. (Anonymous 1999c:A10)

The governor’s stand on this vital issue deserves the approval and support of all Utahns who value their own health and safety, as well as the health and safety of their descendants for many generations to come. (Jarvis 1997:A10)

It is worth noting that opponent expressions of trust in state government and especially in Utah’s governor are likely responses to the officials’ own opposition to the proposed project, a position which opponents view favorably. As governor, Mike Leavitt was himself one of the most vocal opponents of the project. Hence, the discrepancy that appears to exist between levels of trust in state government and levels of trust in federal and tribal government as evidenced by opponent claims-making may simply reflect levels of agreement with specific political stances being taken by government officials regarding the proposed facility.

Though not a governmental body, opponents also frequently mentioned Private Fuel Storage (PFS) when making trust-related claims. Not surprisingly, they tended to express high levels of distrust in PFS and PFS employees as well as in the nuclear power/waste industry as a whole. Although opponent expressions of distrust in PFS were multi-faceted, most frequently, claims makers voiced a disbelief in PFS employees’ assurances of public safety, arguing that such promises are either unrealistic or insincere. A few argued that PFS’s limited liability status would render them unaccountable in the event of an accident of some sort or in case of bankruptcy. Other opponents suggested
that in signing a lease with the Skull Valley band, PFS engaged in a form of bribery. As
one claims-maker asserted:

When Private Fuel Storage was looking for a community that would accept their 40,000
tons of nuclear waste in exchange for a large sum of money, they specifically looked at
Indian reservations, because they knew those communities were the most desperate for
money. (Kimball 2000:A8)

In general, PFS and PFS employees were portrayed by opponents as greedy,
untrustworthy, and manipulative.

Themes related to trust and/or distrust in science and technology, though present,
played a less prominent role in opponent claims-making than did those related to trust
and/or distrust in government. Few opponents mentioned technology explicitly in trust-
related claims except to express skepticism abut proponent claims that the proposed
project will utilize only safe, proven technology. Some claims makers imply in their
arguments that no form of technology can guarantee safety. Opponent claims-making
regarding technology overlaps with opponent risk claims to some degree, that is,
expressions of distrust in technology are implicit in opponent risk communications.

Opponent claims makers expressed distrust in science and in scientists somewhat
more frequently than they expressed distrust in technology. Some expressed a general
lack of confidence in science, asserting doubts in the ability of science to ensure safety. As
one woman explains, “There is a big concern, because even though they say that this is
really safe, scientifically safe…can you guarantee a man-made accident [will not occur]”
(NRCSLC:3-184). More commonly, however, opponents claimed that the science being
used to study and evaluate the proposed project is biased or that the scientists involved in
the project have specific political agendas, preventing them from being objective. The following examples illustrate:

"Education should, ideally, lead to truth. But attempts to “educate” Utahns, coming from those who want to store spent nuclear fuel rods here, should be viewed warily if not laughingly. (Anonymous 1998d:A1)"

Phillip A. Anderson of the so-called Academy of Science attempts to misinform the public about the dangers of plutonium. Before anyone swoons about the lofty sounding Idaho Academy of Science they should know that its Web site lists among its members a virtual who’s who of nuclear polluters in that state. Hardly an unbiased source. (Weeks 1999:A22)

Additionally, in attempts to express a lack of confidence in science and in expert knowledge, it was not uncommon for opponents to use quotation marks around words like “experts” and “specialists.” All of this indicates a rejection of scientifically-based arguments made by PFS officials and other proponent claims makers.

In addition to trust-related claims regarding government and science and technology, it is worth mentioning that opponents frequently expressed a great deal of distrust in proponent claims. Expressions of distrust in proponent claims can be viewed as a form of counter-claims-making. There have been hints of this tendency through the analysis, particularly relating to proponent claims about risks and safety.

Though opponent claims-making was characterized by a variety of counter-claims and expressions of distrust in proponent claims, by far the most prominent counter-claim communicated by opponents was an expressed skepticism regarding the temporary nature of the PFS repository. According to PFS and others supporting the project, the proposed facility is intended as an interim storage facility pending the construction of the permanent repository that has been proposed at Yucca Mountain, Nevada. Hence, much of the basis for opponent skepticism has to do with the many uncertainties surrounding the Yucca
Mountain project. Interestingly, whenever the temporary nature of the facility was being discussed by opponents, the word “temporary” was almost always placed in quotation marks, suggesting that it is questionable whether or not the facility would actually be temporary. However, as the following quotes demonstrate, many opponents were much less subtle and argued quite explicitly that the proposed facility would likely be permanent:

[Proponents] argue the site would be only temporary and that the spent fuel rods would ultimately be shipped to a permanent site in Nevada. However, just as no state wants to be the place for a temporary site, none wants to be the place for a permanent one either. If...Private Fuel Storage gets its way, Utah might become both the temporary and permanent site. (Anonymous 1998a:A20)

The promise that the stored fuel, which remains lethally “hot” for 10,000 years, would be here only up to two 20-year periods is suspect. Once in place on Utah’s soil, it would unlikely ever be moved. (Anonymous1998d:AA1)

So the Department of Energy is not much closer to having a permanent repository for nuclear wastes than it was in 1982, which makes the definition of “temporary” somewhat elastic for any MRS (monitored retrievable storage) facility that might be built in the interim. Utah is wise to resist a MRS, particularly until there is some guarantee of a permanent repository. (Anonymous 1994:A10)

Opponent expressions of distrust in proponent claims are significant on a couple of levels. First, it represents a prominent theme within opponent claims-making that in general, has not been discussed in previous risk literature and was therefore, unanticipated to some degree. But perhaps more importantly, it illustrates well the process by which the two primary groups of claims makers in this case (opponents and proponents) struggled to define the truth, that is, to impose disparate social constructions of this particular risk situation.
**Proponent Expressions of Trust and Distrust**

As mentioned previously, themes related to trust and distrust were not nearly as prominent in proponent claims-making as they were in opponent claims-making. Generally speaking, trust and related topics did not appear to be a significant concern for proponent claims makers. When trust-related claims were presented by proponents, they tended to be in response to trust-related concerns expressed by their counterparts. In many ways, trust-related claims expressed by proponents are the exact reverse of those expressed by opponents. This is especially true of proponent expressions of trust/distrust regarding government. That is to say, proponent claims makers tended to express high levels of trust in federal agencies and in the tribal council and low levels of trust in state government and state officials. Moreover, in contrast to opponent claims-making, proponents tended to express high levels of trust in science and technology.

All in all, there was very little mention of the federal government in proponent trust-related claims-making. Furthermore, most proponent claims that did refer to the federal government or to specific federal agencies appeared to be in direct response to trust-related claims forwarded by opponents. A few proponents did express trust in the very federal agencies that opponents tended to criticize, namely the NRC and the BIA. For instance, one proponent responded to opponent criticisms of the BIA in the following way:

[T]hey’re talking about the BIA. Not once have I seen the BIA come in and say “you guys gotta do this, you guys gotta do that.” I don’t see that at all....They might give us a suggestion now and then, but that’s it. They never, ever meddle in our tribal affairs. (NRCTooele:703-860)
Another claims-maker defended the NRC, explaining that he had once worked with the NRC on a project and had "found that...the NRC was very careful [and] very competent in their activities" (NRC hearing). Other proponents responded directly to the skepticism expressed by opponents regarding the temporary nature of the proposed facility by offering assurances that the federal government will assume responsibility for the long term storage of the waste in question:

The federal government, utilities, and the scientific community all agree that geological storage, such as that planned for Yucca Mountain, Nevada, is the safest way to eventually dispose of spent nuclear fuel permanently....I cannot conceive of any scenario in which the utilities or the federal government, which has legal responsibility to provide for permanent storage of spent fuel, would allow the utilities' fuel to remain indefinitely at Skull Valley. (Northard 1997b:AA2)

Trust-related claims-making by proponents in relation to the Skull Valley Goshute tribal council was also quite limited. The few such claims that were presented were of a defensive nature, that is, they were forwarded in response to opponent expressions of distrust in the tribal council. For instance, during an NRC hearing, one proponent stated:

A lot of people here, they're talking, and I don't know where they're getting their information. I guess tonight's the night for Leon (Leon Bear, chairman of the tribal council) bashing. All of the sudden they've been talking about Leon. I don't see that, and I live here. I live among the Goshutes. I don't see any of that stuff, corruption. I don't see corruption. (NRTCtooele:703-860).

Also, on a couple of occasions, proponents expressed gratitude towards the tribe for their willingness to allow the repository on their reservation, calling it a laudable and responsible act. According to one claims-maker:

In Utah, we have a volunteer host community – the Skull Valley Band of the Goshute Indians – which has spent nearly eight years studying the facts about interim storage of spent nuclear fuel. Their enlightened attitude, based on in-depth research, is refreshing. The band's progressive attitude in helping to address a pressing national issue should be congratulated (Northard 1997b:AA2)
Though claims of this nature cannot necessarily be construed as expressions of trust in a strict sense, they do demonstrate support for the tribal council and their decision to store the waste on their land, implying a sense of trust in the tribe’s ability to manage the repository.

Overall, proponent expressions of trust were minimal as compared with those of opponents. The vast majority of trust-related claims made by proponents were expressions of distrust in state government and especially in Utah’s former governor, Mike Leavitt. This theme of course provides an interesting contrast to opponent trust-related claims-making. Proponents frequently argued that the opposition of Leavitt and other state officials to the proposed facility is hypocritical as it is inconsistent with their usual politics:

The Legislature is... considering a bill to allow additional low-level radioactive waste to be permanently disposed of underground at a facility nearby in Tooele County. This is inconsistent with their position on our project and smells of hypocrisy. (Bear 1998:AA2)

Leavitt claims he is concerned now for the safety, environmentally and health-wise of his children. He claims to sit on his high, inherited horse and think that he has to preserve the land his forefathers rightfully stole. Yet Leavitt and his marionette regulators just recently gave Envirocare their OK to store toxic chemicals possibly equivalent to the toxins to be stored on the Goshute Reservation. (Clark 2001:AA3)

Many claims makers further argued that state officials’ opposition to the project is manipulative, asserting it is purely a political maneuver designed to appease their constituents:

Nuclear science has become a science having politically correct language. Leavitt knows what he must do to get re-elected, whether he believes the PC language or not. (Johnson 1996:A11)

The position which Governor Leavitt has taken on the proposed temporary storage facility on the Goshute Indian Reservation is purely a political position and cannot be justified on the basis of health and safety considerations. He is spending taxpayer money to fight an unjustifiable battle. (Howard 1999:A10)
Opposition to the Goshute plan has provided a rare opportunity for our politicians to demonstrate environmental rectitude without annoying powerful interest groups. (Biltoft 1997:A14)

Not many proponent claims dealt with PFS in the context of trust and/or distrust. However, on a few occasions, proponent claims makers expressed trust in PFS by forwarding counter-claims, that is by addressing trust-related issues presented by opponents. For instance, in response to opponent concerns about the limited liability status of PFS, one proponent maintained:

Governor Leavitt and the Deseret News editorial writers would have Utahans believe that because Private Fuel Storage is a limited liability company, it can avoid responsibility and liability should anything happen to the spent fuel in transit or in Utah. That simply is not true. The utility companies that store fuel at the PFS facility will retain ownership and liability for their fuel. The NRC license will require PFS to demonstrate its ability to fully comply with the terms of the license. (Northard 1999b:A20)

Proponents made trust-related claims regarding science and technology with much greater frequency than did opponents. Furthermore, trust issues involving science and technology appeared to play a much more important role in proponent claims-making than did trust issues involving government. As previously noted, proponents tended to express high levels of trust in science and in technology, though proponents placed a much greater emphasis on their confidence in science and scientific knowledge than in technology.

In fact, proponent claims-making actually involved very few explicit expressions of trust in technology. When technology was discussed by proponents, it was generally an integral part of proponent risk communication. As mentioned in the previous discussion of risk communication, a primary message that proponents wished to convey was that only “proven, safe technology” would be used and that such technology could be relied on to
ensure that the proposed facility is perfectly safe and to address any safety concerns the public may have (Ward 1997:AA2). I would argue that in relying on technological arguments to bolster their claims of safety and to minimize risks, proponents are certainly expressing a trust in technology, although it is generally implicit rather than explicit.

As with technology, though to a greater extent, proponents relied on science to strengthen their position and to boost their claims that the PFS facility would be safe. At times, this involved promoting the concept of science as a truth-seeking tool, and at other times, it involved making scientific arguments, presumably to lend validity to their claims. The following exemplify this type of science-based claims-making:

What [opponents] don’t understand is that science already has a good plan, a complete plan. All that is lacking is getting the political components lined up—getting the voters and politicians to listen and understand how well the plan would work. (Barrowes 2000b:AA3)

Recently a group of world-renowned scientists, including Nobel Prize winners, stepped forward to support this project. (Bear 2001:AA02)

Laws of physics are tough to violate. Because of those pesky laws, nuclear waste cannot explode! It is physically impossible. (Jenkins 2001:A22)

Scientists for Secure Waste Storage do not claim that the site chosen by Private Fuel Storage in the Goshute reservation is the only site for temporary fuel storage or even the best site. We do claim that it is a good site, and it will be easy to ensure that it satisfies all the...criteria required by law or by cautious and knowledgeable scientists. (Wilson 2000:A16)

...safety of the fuel storage can be easily deduced from and is dependent on some fundamental scientific principles. (NRCToole:1926-2086)

As the above examples illustrate, often times proponent claims-making did not so much involve expressions of trust in science per se as it did an implicit assumption that science is valid and trustworthy or that science can be equated with truth. Again, it is my position that this amounts to expressed trust in science.
Additionally, some proponent claims makers expressed a belief that science is the best or most appropriate means of assessing risk situations such as the one in question and that science, rather than politics or emotion, could provide answers to any questions relating to the proposed project. Recall that a similar theme was prevalent in proponent risk communication and specifically risk-related counter-claims, which at times focused on the "irrationality" of non-scientific risk claims made by opponents. A few proponents, however, conveyed this message much more directly in what I am interpreting as trust-related claims:

[The decision] should be, in my view, and I hope in your view, based solely on the science and technology of the situations as expressed in the base regulations, which in turn are based on the fundamental scientific principles. (NRCToole:1926-2086)

What we have here is a situation where we have to decide who's telling the truth: the wild-eyed radicals who try to scare us to death with statements they can't prove, or the business-like professionals who take the time to carefully explain how the fuel rods will be transported and stored at the facility, and who can back up what they say with scientific, technical, and financial proof. (Wagaman 2000:A10)

Claims of Environmental Equity and Inequity

This section will analyze and compare opponent and proponent claims related to environmental equity. As discussed in Chapter II, the relevant literature has tended to focus on the association between environmental risks and hazards and poor and minority communities. In other words, it has tended to emphasize environmental inequities as defined by race and class. In the context of this particular case, however, other variables proved to be just as relevant. In particular, the geographic location of the proposed facility is of significance as it would involve the storage in one state hazardous waste that was generated in and shipped from several outside states. For this reason, and in keeping
with the flexible, qualitative nature of this study, the term environmental equity is being used broadly here to encompass any environmental inequities that are argued by claims makers to exist, which may include but are not limited to those defined by race and class. Moreover, for my purposes, environmental inequities will include any inequities claimed by opponents and proponents to be associated with the proposed project. The proposed facility is, after all, an “environmental project” having environmental quality and policy implications and affecting the relationship of surrounding communities with their environment.

**Opponent Claims of Environmental Equity and Inequity**

Issues related to environmental equity played a very prominent role in opponent claims-making. Opponent claimed that the proposed project is inequitable in a number of different ways. First, and not surprisingly, the concepts of race and class did in fact frequently enter into opponent claims-making. Specifically, opponent claims makers clearly asserted that the project is unfair for members of the Goshute tribe. Several opponents argued that PFS and other project proponents are attempting to exploit the Goshute tribe because they are a poor, minority community. Interestingly, opponent claims makers generally situated such claims within a broader sociohistorical context. Often times, as the following examples illustrate, they suggested that the current proposal is indicative of a broader pattern of environmental injustice:

PFS is targeting poor communities, specifically Native American communities, across the country looking for places to put this waste. I don’t think there’s a single gated community in the United States that received an invitation to take their however many millions in exchange for this waste. It was poor communities that were targeted. There’s a real environmental justice issue here (NRCSLC:3-184)
We are concerned that the U.S. Government is trying to solve a nuclear waste problem by setting up nuclear waste storage sites on tribal lands by a course of foul play, if necessary, as illustrated by a field study conducted by the local BIA agency towards the Skull Valley Goshute tribe (NRCSLC:792-894).

Native lands are again a target for nuclear waste, both the Nevada test site at Yucca Mountain as well as Shoshone land. We see that the efforts of the nuclear industry under the veil of the Office of the Nuclear Waste Negotiator has landed us here. Other tribes were the focus of this strategy; McDermott Reservation in Nevada, Mescalaro Apache in Arizona. This is the pattern of environmental injustice, period, and it needs to stop (NRCSLC:622-645).

Other claims makers instead expressed concerns about the current project setting a precedent for future environmental injustices involving Native American tribes. One opponent contended that:

PFS could essentially set the national policy concerning nuclear waste and become licensed only through criminal activity on tribal lands. Precedent will be set for other tribal sovereignties and impoverished communities that have no legal recourse, background or political clout to stop bribery, embezzlement and corporate federal agenda. (NRCSLC: 343-467)

In arguing that the proposal is inequitable, a few opponents went so far as to describe the proposed project as an instance of environmental racism:

What I have witnessed here these past five years is environmental racism at it worst. The pattern never changes. You suit the purpose of the dominant society regardless of the health, safety, welfare, and traditions of the native people. (NRCSLC:792-894)

I feel that you as a Board (NRC Board) are still not addressing the environmental racism issue. It’s still all being glossed over. It’s just being listened to, not dealt with, not really discerned here. (NRCSLC:983-1126)

This places a disproportionate risk and disadvantage to the band compared to a dominant society or white community. This is environmental justice and racism. (NRCTooele:98-276)

Although the term "environmental racism" was infrequently used by opponent claims makers, a great number of opponents intimated claims of environmental racism when they described the project as exploitative and unfair for the Goshute tribe. Thus, environmental racism was a major, albeit somewhat subtle, theme in opponent claims-making. It is worth
noting that the above-mentioned claims of inequity, those related specifically to race and/or class, are of course the type of claims most commonly associated with the environmental justice movement and most frequently discussed in the literature. Hence, these claims might be construed as environmental justice claims or as representing an "environmental justice frame."

Even more common than claims regarding inequities related to race and class were claims regarding geographic inequity. That is, opponents asserted that the location of the proposed facility is inequitable. Specifically, opponents frequently argued that the proposed facility was, for a variety of reasons, unfair for residents of Utah. Many asserted that it would simply be unfair to store in the state of Utah waste that was generated in other states. The following examples illustrate this claim, which was the equity-related claim most commonly forwarded by opponents:

Areas that generate the waste should be responsible for storing it. Utah has enough problems of its own storing materials without becoming a dumping ground for Eastern states. (Anonymous 1999a:A10)

Keeping the waste at the places that generated it not only makes the most sense but is the fair thing to do. (Anonymous 1999d:A6)

If I make a mess in my backyard, I clean it up. I don’t throw it over the fence into my neighbor’s backyard. (Southern 1999:A10)

Utah does not have any of these nuclear power plants within the state, and so why should we be the dumping ground for the other facilities? (NRCToole:1339-1427)

Some opponents also argued that the state of Utah has borne its fair share of risks and burdens for the good of the nation and should not be asked to bear any more:

A state that has already suffered a human toll from previous nuclear tests and that is now carrying the burden of incinerating much of the nation’s chemical-weapons inventory does not want and does not deserve the added burden of hosting the nation’s first centralized nuclear waste repository. (Anonymous 1998e:A9)
Utah already is storing its share of waste, such as the chemical weapons at the Dugway Proving Ground. It shouldn’t have to store materials now residing in places thousands of miles away. (Anonymous 1998c:A10)

Utahns didn’t generate the waste; we don’t consume electricity from nuclear plants’ we’ve certainly suffered enough as a national sacrifice area for nuclear activities. (Webb 1997:AA1)

A few opponents instead argued that PFS is attempting to take advantage of Utah’s geographic and political vulnerability. For instance, one claims-maker explained that “Utah is tired of being picked on because of their state’s remoteness and their lack of political clout” (Anonymous 1998f:A10).

Interestingly, it was not uncommon for opponents to couch claims of geographic inequity in terms of costs and benefits. That is, they often described the proposed facility in terms of inequitably distributed costs and benefits. As one claims-maker explained:

The nuclear power plants should keep their own waste. We didn’t have the benefits of the power; we shouldn’t have the consequences of their waste products. (Madsen 2000:A10)

Another prominent theme in opponent claims-making was an expressed belief that various aspects of the siting process had been inequitable. These claims, which I will refer to as claims of procedural inequity, were also multi-dimensional. Many opponent claims of procedural inequity parallel the opponent claims of distrust in federal agencies and in the tribal council discussed above. For instance, opponents often argued that the siting process was unfair because the NRC would not seriously consider public input when making their decision about whether to license the PFS facility. Some opponents expressed a belief that the Environmental Impact Statement (EIS) reflected a faulty or biased evaluative process. Other claims makers argued that the process by which the tribal council arrived at their decision to sign the lease with PFS was inequitable and unfair for other tribal members. These claims are closely related to opponent claims of abuse of
sovereignty and will be discussed more in the next section. One of the most common claims of procedural inequity advanced by opponents, and one that is not mentioned in the discussion about trust and distrust, was that important information relating to the proposed project, to which they felt entitled, was being withheld from the public. Some opponents expressed great frustration about having unanswered questions. The following are examples of this type of equity-related claim:

When it comes to locating a nuclear waste storage dump on the Skull Valley Reservation west of Salt Lake City, who can blame Utahns for wanting to know every single detail? Unfortunately, a federal judge has ruled that state officials cannot be allowed to review confidential portions of a lease agreement that could lead to the development of a high-level nuclear waste facility for spent fuel rods. (Anonymous 1999e:A14)

I would also like to make a comment regarding the...Final Environmental Impact Statement...My attempts to receive one were very difficult or were unsuccessful...So I would like to ask, request that the NRC make this process a little bit less opaque to the public and be able to supply materials. (NRCSLC:622-645)

Generally speaking, opponent claims-making reflects an expressed belief that the overall siting process is undemocratic, secretive, and biased in favor of PFS and the nuclear power industry.

**Proponent Claims of Environmental Equity and Inequity**

Equity-related claims advanced by proponents conveyed an entirely different type of message than those advanced by opponent. According to proponent claims makers, the PFS project is completely fair and equitable for all involved, and especially for the Skull Valley band of the Goshute tribe. Proponents maintain that the proposed facility represents a rare opportunity that will benefit the economically depressed Goshute tribe without harming anyone else. Several claims makers go so far as to suggest that the
project may serve to rectify past or existing inequality adversely affecting the Goshute and other Native American tribes:

I believe that if the facility is built, those people who owned the land “in the beginning” will finally enjoy the things that we settlers have deprived them of over these many years. (Johnson 1993:A7)

Was it democratic, or even coincidental, that the Skull Valley Goshute Nation was confined to a tiny parcel of land that no one else wanted precisely because it possesses so little potential for economic development? To my fellow environmentalists: Please focus your energy on the real problems. Either develop alternatives for Goshute economic development or quit whining. (Pace 2000:A14)

In defending their position that the proposal is fair, some proponents responded to specific claims of inequity forwarded by opponents. For instance, one proponent responded to claims of geographic inequity in the following way:

I’ve heard a lot of people, especially in the news media, talk about how nuclear waste isn’t Utah’s problem, and I think that is certainly incorrect. We’re not just citizens of the state of Utah, we’re not just citizens of Tooele County, we’re citizens of the world, and as a human race we all have to work together. (NRCTooele:3-23).

Another proponent responded to a claim of environmental racism:

Cook (a state official and project opponent) erroneously claims my people are being taken advantage of and that we don’t even live on the reservation...does he think we are ignorant and unable to make decisions for ourselves? Does he think we would jeopardize our health, safety, and future livelihood for money? Cook does not know us at all. (Bear 1997:AA4)

However, the vast majority of proponent equity-related claims focused not so much on the equitable nature of the proposed facility, but on inequities they contend are associated with efforts to thwart the project. Most of the time, when arguing along these lines, proponents claimed that to disallow the proposed facility would be either hypocritical, discriminatory, or both. The base of such claims is that other hazardous and/or polluting facilities have operated in Tooele County for years in the absence of opposition or controversy. The general attitude among proponents seems to be that in
light of this reality, opposition to the PFS facility is inconsistent at best and racist at worst.

Below are some examples of typical proponent claims of inequity:

Copper mines, smelters, waste disposal landfills, refineries, waste burners, Army nerve gas testing and burning plants, chemical factories and other facilities litter the countryside all around our small reservation. They regularly foul the air and the land. Yet our proposal to build a safe, clean, temporary storage facility that emits no pollutants into the air, water, or ground is soundly rejected by the governor....Where is it written that its OK to build a waste storage plant as long as you're not an Indian tribe? (Bear 2001:AA02)

Were Utahns upset about any of the chemical and nerve weapons sites, incinerators, or military bombing ranges that essentially surround the Goshute reservation. Hardly, because they saw these as contributing to the economic base of Utah; but when Native Americans want to do it to their lands and make a decent living, Utahns are outraged...It is perfectly OK for white, Mormon Utahns to destroy land and foul our air and water with projects like the Deseret Chemical Depot, Dugway Proving Grounds, the Legacy Highway, private low-level radioactive dumps, and, of course, the nation's single largest air polluter, MagCorp; but when Native Americans try to do it well....that’s just going too far! (Hildebrand 2001:A8)

This hypocrisy in fighting a viable source of income for the Goshutes is nothing more than a mix of racial bigotry and persecution and sour grapes.... (Goodman 1998:A10)

Most proponent claims of inequity were directed at the opposition generally. However, a few claims makers directed their allegations of discrimination at state officials and at Utah’s Governor in particular. As the following example illustrates, proponents sometimes criticized specific political actions taken by legislators in an attempt to block the proposed project:

We thought the days of persecution and discrimination were past. We were wrong. Today we are being targeted by the governor for selective discrimination, which is hypocritical and unfair. That’s why we oppose the political tactic by the governor to take over Skull Valley Road and block economic development opportunities available to us. The governor’s tactic to take over the road is an abuse of power targeting a specific group of people – the Skull Valley Band of Goshute Indians. (Bear 1998:AA2)

Proponent claims of environmental equity and inequity appear to essentially reflect an effort to circumvent opponent claims of inequity. Proponent claims-making redirects equity considerations by highlighting the injustices associated with blocking the proposed
project rather than those associated with allowing it. In this way, though both opponents and proponents are making the same types of claims, at times, they appeared to be speaking different languages. In general, they spoke around rather than to each other.

**Claims Concerning Tribal Sovereignty**

This final section will discuss and compare opponent and proponent claims dealing with tribal sovereignty. Sovereignty is a rather complex and multi-dimensional concept, and my analysis will focus primarily on three of its dimensions—self-determination, abuse of sovereignty, and threatened sovereignty. Both the literature and the sociopolitical context of the current study indicate that these are important sovereignty-related issues to consider and should play into claims-making activity. As discussed in Chapter II, self-determination is a concept that is currently used somewhat synonymously with tribal sovereignty and for my purposes, refers to tribal independence in establishing and maintaining tribal affairs, including governmental structures and procedures, and in pursuing economic development activities. Thus, in my view, abuse of sovereignty and threats to sovereignty may include either outside or inside interference with these specific forms of tribal independence.

My emphasis on these three aspects of sovereignty is not, however, intended to limit my analysis or preclude discussion of additional themes that are prevalent in opponent and proponent claims-making. As discussed in previous chapters, tribal sovereignty is a concept that remains somewhat nebulous; its social, political, and legal meaning is both ambiguous and always evolving. In other words, it is a concept that is open to a wide variety of interpretations. Hence, risk controversies such as that being
analyzed here provides a unique opportunity for claims makers to construct tribal sovereignty in accordance with their own views. My goal, therefore, is to discover how opponent and proponent groups utilized the sociopolitical arena to variably construct the concept in this risk situation. My analysis reveals that opponent and proponent claims concerning sovereignty differ markedly and that the two groups conceptualize the concept in very different ways. Opponent claims concerning sovereignty were quite diversified overall, however, most opponents seemed to liken sovereignty to tribal governmental affairs and focused on interference into tribal affairs, which they perceived to be an abuse of sovereignty. Proponents, on the other hand, were much more unified in their claims-making and tended to equate sovereignty with self-determination. Although issues related to tribal sovereignty played an important role in the claims-making activity of both opponent and proponent groups, this was more true for the latter.

**Opponent Claims Concerning Tribal Sovereignty**

Overall, opponent claims dealing exclusively with tribal sovereignty were relatively infrequent; these types of claims, although significant, were made less frequently than the other three types of claims discussed above. However, it is important to note that the concept of tribal sovereignty, as portrayed by opponents, interacted closely with the concepts of trust/distrust and environmental equity/inequity to such a degree that it was often difficult to distinguish between the three types of claims. In other words, much of the time, claims dealing primarily with trust and equity issues also related to sovereignty issues, though in a less direct way. It can be reasonably inferred from my analysis that although opponent claims addressing tribal sovereignty alone were not as common as
other types of claims, opponent concerns about issues related to sovereignty were often implicit in their claims regarding trust and equity issues.

In many instances, opponents depicted tribal sovereignty in a somewhat negative manner, maintaining that sovereignty is largely “to blame” for the proposed project and for the current risk controversy. For instance, several claims makers expressed anger and frustration at the state’s inability to intervene in the PFS/Goshute agreement or to influence the decision-making process in any way. As the Goshute tribe is a semi-sovereign nation, the tribal government operates independently and is not bound by state law. The state of Utah has no legal jurisdiction on reservation lands and cannot interfere with tribal affairs. Opponents argued that it is unfair for state officials to be excluded from the process for siting the proposed facility as its costs could potentially be dispersed across the state of Utah. One opponent explained:

Federal judge Tena Campbell’s ruling this week on Utah’s efforts to keep nuclear waste off the Goshute reservation is difficult to argue with. The final decision, as she said, rests with the federal Nuclear Regulatory Commission….And yet the ruling has one extremely vexing aspect to it. Indian tribes have sovereign rights on their reservations. But what happens when a reservation exercises its rights in such a way that it causes danger to people outside the tribal lands? By storing 40,000 tons of high-level nuclear waste above ground a scant 40 miles from Salt Lake City, the tribe would indeed be creating a potential hazard to the people around them. In addition, they would harm the state’s reputation. (Brown 2002:A10)

Other opponents claimed that tribal sovereignty has generated legal loopholes, allowing PFS to avoid compliance with certain environmental laws:

The reason PFS is proposing to build its facility on a sovereign Indian reservation is so that it can do an end run around “state restrictions” in Utah. (Anonymous 2001b:A15)

I suspect that the reason that [PFS is] looking at Indian land is because they can bypass EPA laws as well as probably oversight of governmental agencies (NRCSLC:1890-1918)
Several opponents expressed concerns that the project proposal involved abuses of sovereignty. A number of allegations were directed at the Goshute tribal council and especially at the council chairman, Leon Bear. Some claims makers asserted that in signing the lease with PFS for personal gain and against the wishes of some tribal members and the state of Utah, tribal council members abused their power as leaders of a semi-sovereign nation and therefore abused the sovereign rights of their tribe. One opponent argued:

Instead of protecting the rights of American Indians, sovereign immunity is often used as a cloak for unscrupulous tribal leaders to hide behind while they take advantage of their position for personal gain. One of the most recent schemes involving sovereign immunity is the Skull Valley Goshutes' plan to allow a consortium of nuclear power giants to establish an atomic waste dump on their tiny reservation in Tooele County. (Hayes 1997:A9)

As the examples below illustrate, other opponents maintained that tribal council members had abused their "sovereign immunity" as a means of avoiding accountability:

Leon Bear has refused to relinquish power, and he is in fact trying to refuse to respond to investigations into criminal activities, using the sovereign immunity of the Tribe as a cover. The Tribe does not intend to allow its sovereign immunity to be used in that manner, but desires a full and impartial investigation into the serious allegations of embezzlement, bribery, and corruption which are currently being made against Leon Bear and co-conspirators. (NRCSLC:543-720)

Mr. Bear has provided material false statements before the NRC and he has refused to provide evidence to the NRC in support of the NRC's inquiry concerning the allegations that have been referred to earlier of embezzlement, bribery and corruption. Mr. Bear falsely claims sovereign immunity. (NRCSLC:543-720)

Another form of abuse of sovereignty that was frequently alleged by opponents was that the BIA had violated the sovereign rights of the Goshute tribe by interfering in tribal affairs. The following statements exemplify this type of allegation:

The intrusion and the interference of the Bureau of Indian Affairs....is continual and goes on consistently....Under Federal Indian Law the right of tribal self-government is a fundamental aspect of tribal existence. In this instance there is neither statutory nor tribal
authority to warrant any BIA intrusion into the internal affairs of the tribe. The tribe’s general council established its own rules through a quorum vote. (NRCSLC:543-720)

I would also like to say that the Band is tired of the BIA’s constant interference in Skull Valley matters. I have also witnessed the BIA using their police force to disrupt our tribal elections to keep Leon Bear in office. (NRCSLC:900-965).

The issue of threatened sovereignty was far less prominent in opponent claims-making than abuse of sovereignty. A few opponents did, however, associate tribal sovereignty with a particular lifestyle and culture, those of traditional Native American tribes, and associated the proposed facility with a loss of that lifestyle and culture. As one Goshute tribal member asserted during an NRC hearing, “[o]ur sovereignty is not for sale. I’m asking you to help us protect our beautiful desert and our future generations” (NRCSLC:1409-1506). Another claims-maker referred to the lawsuits filed by opponent groups as “battles for [the tribe’s] sovereign rights” (NRCSLC:543-720).

In addition, an issue that came up a number of times in opponent claims-making was the issue of precedent. Some claims makers expressed great concern that the proposed PFS project would set a dangerous precedent for tribal sovereignty, making it easier to site hazardous waste facilities on Native Americans lands in the future:

PFS could essentially set the national policy agenda concerning nuclear waste....Precedent could be set for other tribal sovereignties and impoverished communities that have no legal recourse, background, or political clout to stop bribery, embezzlement, and corporate federal agenda. (NRCSLC:343-467)

[T]he implications for Native Americans are truly dire. This precedent could end sovereignty as they know it. (NRCSLC:57-169)

The issue of precedent is an especially critical one given the ambiguity currently surrounding social, political, and legal definitions of tribal sovereignty.

With rare exception, the issue of self-determination was not included in opponent claims-making, at least not explicitly. On a couple of occasions, however, opponents
argued that the Goshute tribe should consider more favorable forms of economic development before agreeing to house the PFS facility. Also, a couple of opponents asserted that the tribal council chairman had, in abusing his position of power, taken steps to block alternative forms of economic development in favor of the PFS project. Each of these two types of claims relate directly to self-determination insofar as it involves tribal economic development.

It is important to recognize the extent to which opponent claims concerning tribal sovereignty parallel other types of opponent claims. This is especially true of claims alleging abuse of sovereignty. Clearly the aforementioned claims regarding abuse of sovereignty by tribal leaders resemble opponent claims of distrust in the Goshute tribal government as well as the claims of procedural inequity concerning tribal processes. Similarly, claims regarding abuse of sovereignty by the BIA parallel claims of distrust in the BIA. In fact, in many instances, there is no clear line between these different types of claims. For instance, each of the claims concerning abuse of sovereignty discussed above could also be interpreted as claims of distrust or claims of inequity or both. This is significant because it demonstrates how closely these three concepts interact in opponent claims-making, that is, in opponents’ socially constructed version of the risk situation being analyzed.

**Proponent Claims Concerning Tribal Sovereignty**

Issues related to tribal sovereignty played a much more significant role in proponent claims-making than they did in opponent claims-making. Proponent claims regarding sovereignty were, however, much less varied than those of opponents and were
thus fewer in number. Tribal self-determination was undoubtedly the most prominent theme in proponent claims-making concerning sovereignty. Most proponent claims regarding tribal self-determination dealt with the tribe’s right to pursue economic development on tribal lands.

Many proponent claims makers simply equated the Skull Valley band’s involvement in the PFS project with self determination or with tribal sovereignty more generally. In effect, the proposed facility was portrayed as something the tribe is entitled to. The following examples will serve to illustrate this theme:

Opportunity has finally come to the Skull Valley Band of Goshute Indians in the form of spent nuclear fuel coming from nuclear power plants in these United States...By our sovereignty alone, we can do this. We thank the U.S. government for this status. (Bear 1998:A12).

We (the Skull Valley band) seek resources to provide a solid foundation on which to build upon, providing for our tribal government, capital to support our tribal programs to sustain tribal members and the reservation...We believe that economic freedom is for all, even the Goshute Tribe. (Bear, Skiby, and Wash 2002:A10)

You can’t blame the Goshutes for choosing to do what they are doing, which they have every right to do as a sovereign state. (Clark 2001:AA3)

Some proponents went further than just associating the PFS project with tribal sovereignty by demonstrating personal support for the project and encouraging the tribe’s efforts at self-determination:

While I am certainly not pro-nuclear anything, I respect the rights of other sovereign nations, including the Skull Valley Goshutes, to do with their land as they see fit, especially when you put things in historical perspective. (Hildebrand 2001:A8)

The Goshute Indians have finally negotiated a contract for the storage of certain nuclear material on their reservation. I hope it is a good contract with ample reward which will give them a superb livelihood. I hope they will use the money wisely and make us as jealous as possible. Have you toured through their country and seen the conditions they put up with? (Johnson 1997:A11)
Several proponents bolstered their arguments in defense of self-determination with claims that the PFS facility is not just an option for development but an economic necessity. At times, the PFS facility was depicted as the only viable option given the tribe’s grave economic situation. For example, one claims-maker asserted:

[The Goshutes] have struggled for years to keep their culture and ideals alive. Despite the fact that they have been thrown into the desolate areas of this country with no natural resources to live on or profit from, they are still striving to make a comeback. In this capitalistic world there is only one way they can do that: with money. They have been given nothing and had everything taken away. This is the first opportunity they have to get money to buy things like medical facilities of their own and make conditions bearable so they don’t lose their children to disease or simply to the culturally void pull of wealthy America. This is their opportunity to survive. (Clark 2001:AA3).

Although proponents generally did not address the issue of threatened sovereignty directly, a primary argument advanced by proponent claims makers was that in attempting to block the PFS project, the state was hindering the Skull Valley band’s pursuance of self-determination, a sovereign right. This type of claims-making can reasonably be construed as a concern about self-determination and thus sovereignty being threatened.

Following are two examples of this type of claims-making by proponents:

Freshman Congressman Merrill Cook, R-Utah, has introduced his first bill as a means to stop nuclear-waste shipment through Utah, a roundabout way to attack the sovereignty of the Goshute Indian Tribe. I doubt if any of the fine elected Utah congressional representatives will defend the Goshute Indian Tribe’s right to determine its own destiny without outside interference. (Cesspooch 1997:A8)

...we oppose the political tactic by the governor to take over Skull Valley Road and block economic development opportunities available to us... There have been statements made recently that the governor intends to place expensive tolls on shipments to the reservation on Skull Valley Road, denying tribal members the right to self-sufficiency. (Bear 1998:AA2)

The issue of abuse of sovereignty did not appear to be a concern for proponent claims makers. Claims alleging abuse of sovereignty were entirely absent from proponent claims-making. Proponents did, however, on several occasions, respond to opponent
claims concerning abuse of sovereignty, primarily in defense of tribal council members and BIA officials who had been accused of abusing their power.

Finally, it should be noted that, as was the case with opponent claims-making, albeit to a lesser degree, there is some overlap between proponent claims concerning tribal sovereignty and those concerning trust issues and equity issues. Perhaps most notably, proponent claims of abuse of sovereignty on the part of state officials resemble certain proponent claims of inequity, particularly those asserting that efforts to thwart the PFS project are unfair and discriminatory.
CHAPTER V

DISCUSSION AND CONCLUSION

In examining differential claims-making by opponent and proponent groups, my analysis reveals a great deal about the sociopolitical conflict characterizing the risk controversy of interest, shedding some light on this particular case of policy gridlock. It demonstrates how the two groups utilized the sociopolitical arena to construct two very different versions of the risk situation via claims-making activity, each with its own set of policy implications. This study focuses specifically on four dimensions of those disparate versions of reality (frames)—environmental risk, public trust/distrust, environmental equity, and tribal sovereignty—and thus deals with only a small part of the rather complex and multi-faceted claims-making activity that defines this risk controversy. However, my emphasis on these four concepts allowed me to conduct a rich and detailed examination of a few particularly significant aspects of the conflict that appear to have contributed significantly to variability in framing. This focus has provided for an in depth and more complete understanding of how differential framing has contributed to this risk controversy.

This chapter will begin with a general discussion about what my analysis revealed regarding differential claims-making by project opponents and proponents. This section is designed to interpret and tie my analysis together and highlight some of the most significant findings. The second and third sections will address some important implications of my analysis for future theorizing and research about the social construction of environmental risk and for environmental risk-related policy. The final section will
briefly discuss some of the limitations associated with this study and will introduce some critical questions meriting further attention that I was unable to answer given the nature and content of my data.

**General Observations and Discussion**

Though both opponent and proponent groups utilized each of the four frames in their claims-making, not all frames played equally significant roles in the claims-making of each group. For instance, public trust/distrust and environmental equity frames were much more prominent in opponent claims-making than in proponent claims-making, whereas tribal sovereignty played a more significant role in proponent claims-making. It may be the case that the personal or collective social constructions of group members were tied more closely to certain concepts than others. More importantly for my purposes given my focus on claims-making, it may also be the case that certain frames or concepts proved to be a more effective or more convincing means of arguing depending on whether claims makers were supporting or opposing the proposed project.

My analysis furthermore shows that opponents and proponents conceptualized each of the four frames differently and often in contradictory ways. This was most apparent in the cases of environmental equity and tribal sovereignty. With regard to the former, according to opponent claims-making, a number of environmental inequities are associated with the proposal and to allow the project to continue is discriminatory. On the other hand, proponents contend that to disallow the project to continue is inequitable and discriminatory. Similarly, opponents claimed that the proposal was associated with abuse
of sovereignty on a number of levels, whereas proponents argued that efforts to thwart the project constituted abuse of sovereignty.

Not only did opponent and proponent groups define each concept in different ways, but they tended to focus on different facets of each concept. For instance, with regard to risk communication, whereas proponent claims makers tended to center their arguments around the technical and scientific aspects of the potential risks, opponents tended to rely on emotional and/or moral arguments, often relying on the occurrence of past risk-related tragedies and/or past deception and mistreatments by government agencies to legitimize their position. Lidskog and Litmanen (1997:61) refer to these types of framing differences as “different social definitions of environmental conflict,” of which there are three—a scientific-technical, an economic, and a political definition. According to this model, the opponents in this case tended to use a political definition while the proponents tended to use a scientific-technical one. The authors explain that conflict participants generally utilize a definition that reflects their own personal values and interests. In other words, these differences may reflect disparate pre-existing views or social constructions on the part of the claims makers themselves. They may also indicate differences in rhetorical tactics. Either way, the different points of emphasis or variability in framing with regard to pertinent concepts contributed significantly to divergent versions of the same risk situation and thus to the underlying conflict.

The above discussion illustrates that at times, the disparities between opponent and proponent claims-making were so great that the two groups of claims makers appeared to be communicating in different languages or at least, arguing past one another. At other times, however, the two groups seemed to be directing their claims at each other. This
tendency is evidenced in particular by the prevalence of counter-claims-making by both opponent and proponent groups as well as what Hannigan (1995:48) refers to as "contesting claims," the process by which claims makers must continuously contest counter-claims in order to maintain the legitimacy of their own position. In this case, both opponent and proponent claims makers engaged in a fair share of counter-claims-making and contesting claims; however, it was much more common among proponents. This may be an indication that it was much more difficult for proponents than opponents to influence socially accepted definitions of the risk situation. This would make sense given that the proposed project has, from its onset, been the subject of widespread public opposition across the state of Utah.

The prevalence of counter-claims-making demonstrates perhaps more clearly than anything, how claims-making groups struggle to negotiate meanings within the sociopolitical arena. Moreover, it raises the question of who claims makers are intending as their audience, that is, who it is they are trying to persuade. It is important to note that the Nuclear Regulatory Commission, the agency charged with making final decisions regarding the proposed facility, are not directly accountable to the general public and are not required to consider public opinions in their decision making process. More importantly, the claims forwarded by both opponents and proponents would indicate that both groups are cognizant of this reality, suggesting that the primary agenda of claims-making activity may not be to persuade the NRC in any immediate sense. Rather, opponent and proponent claims-making and counter claims-making more accurately represents an effort by both groups to dominate the sociopolitical arena so as to influence public perception and therefore broader societal definitions of the risk situation of interest.
as well as risk situations in general. Whether intended or not, in affecting shifts in publicly accepted perceptions and/or definitions of risk situations, claims-making activity may have the effect of influencing future policy decisions regarding environmental risk.

As a final note on the use of frames by claims makers, my analysis clearly demonstrates that both opponent and proponent groups portray the four concepts as interrelated; that is, the four frames intersected quite notably in opponent and proponent claims-making. This phenomenon illustrated how closely the concepts of risk, trust, equity, and sovereignty relate in risk situations such as this and how the contributions of each of these concepts to socially constructed realities cannot be fully understood in isolation. Though not unexpected, this intersection of frames made my analysis both more difficult and richer. It made it more difficult because it became challenging at times to distinguish between types of claims (trust, equity, etc.), as there was a great deal of overlap between them; it made it richer, however, because it allowed me to describe the two competing versions of reality in a more complete and accurate manner. In addition, the intersection of concepts as conveyed by the claims makers served to shed light on the social, political, economic, and historical context in which this case is embedded. In particular, it highlighted the historical importance of the relationship between trust, equity, and tribal sovereignty and the uniqueness of the issues of trust and equity in matters involving Native American communities.
Implications for Future Risk Studies

The social construction of environmental risk is a broad and complex area of inquiry in environmental sociology that has proceeded in a variety of directions. In general, there has been a certain lack of consistency with regard to what constitutes social constructionism and social construction processes and what role, if any, claims-making plays in these processes. Social constructionism is by its very nature broad and ambiguous, and the fact that there has been a lack of uniformity in social constructionist theorizing and research is not in and of itself problematic. It may be necessary, however, to break the whole of social constructionism down into more manageable parts for research purposes. Unlike most previous studies dealing with the social construction of environmental risk, a primary goal of this study has been to acknowledge the relationship between social constructionism and claims-making activity and to distinguish between them at the same time. This study proceeded under the assumption that risk controversies such as the one of interest here are socially constructed and re-constructed via numerous types of social and political processes and that claims-making represents one important means by which this occurs. Claims-making, from my perspective, represents an attempt to influence collective definitions or socially and politically accepted social constructions of a situation. By understanding claims-making processes, we can begin to uncover social constructionism in its broader form. By understanding the variability in framing that inevitably characterizes claims-making activity, we can begin to recognize and understand how social construction processes breed conflict such as that which has been observed in the risk situation being examined here. Thus, my position is that analyses of claims-
making activity in risk situations represent a step in the right direction if we are to more fully understand how risk situations are constructed in the sociopolitical arena. At the same time, it is certainly not the only step to be taken, nor does it provide a comprehensive understanding of social construction processes.

This study highlights the usefulness of using frames as an analytic tool when studying social constructionism or claims-making more generally. The use of frames allows researchers to more easily perceive and organize data and analyses. It also allows for data to more easily be compared and contrasted and is therefore especially useful in studies of variability in framing. Though limiting in some ways, analyses focusing on specific dimensions of the risk situation that are particularly relevant given its social, political, and or historical context allow the researcher to engage in a more in-depth and in some ways, more fruitful, examination of the data, especially when conducting qualitative studies. Additionally, the use of frames by claims makers in this as well as other risk situations has proven to be an effective means of presenting claims in the sociopolitical arena. In particular, frame alignment, or the reformulation of frames to reflect societal values, has proven to play a significant role in risk controversies in which opposing camps struggle to affect policy outcomes. Frame alignment certainly contributed to the conflict being studied here and was especially evident in opponent efforts to “moralize” their arguments to borrow and term from Albrecht and Amey (1999:742). Opponents frequently used moral or emotional arguments in an attempt to align their position with societal values about trust and equity, for example. Hence, the use of frames and frame alignment are valuable tools for claims makers and provide a useful way of understanding the efforts of claims makers to influence policy decisions in this case.
Finally, in many ways, my analysis demonstrates the importance of using a context sensitive approach as advocated by Kubal (1998) and others. The social, political, and historical context in which the current case study is embedded is significant enough that most claims could not have been entirely understandable outside of this context. For example, many opponent claims regarding health and safety risks and distrust in federal government were tied directly to the history of nuclear weapons testing and government cover-up. Similarly, both opponent and proponent claims concerning tribal sovereignty were often couched in terms of prior relations between Native American tribes and the federal government. Furthermore, the social and cultural context of this particular case—particularly the involvement of a poor, rural, Native American community—renders this risk situation unique in several important ways that have been discussed in previous chapters. Context can always be expected to play a significant role in risk controversies because it not only determines, in part, which types of claims are presented and how, but also their relative effectiveness and how they are received. It should be noted, moreover, that the social, political, and historical context in which claims are embedded can be revealed most clearly and completely through qualitative analysis, which then tells us something about the value of qualitative risk studies.

Policy Implications

An overriding goal of this study has been to provide insight into the policy gridlock that has come to characterize hazardous waste management in recent years. It is intended to emphasize that the management of environmental risks is as much a social, political, and economic issue as it is a technical and scientific issue and that the former appears to be
contributing most significantly to policy failure. Thus, first and foremost, this reality needs to be more widely recognized and accepted among industry workers, regulatory authorities, and policy officials. To neglect sociopolitical factors relevant to environmental risk situations is to skirt around some of the most difficult policy issues surrounding waste management.

This study further highlights the importance of studying the claims-making activity that characterizes risk controversies as a means of addressing sociopolitical difficulties associated with hazardous waste management and policy. Local environmental conflict such as that which transpired in the current risk situation is rooted in differential definitions of the situation and is maintained and intensified by the mobilization of those definitions in the sociopolitical arena via claims-making activity as opposing camps collectively try to affect societal definitions in order to influence policy outcomes. By examining this claims-making activity more closely, we can begin to identify precisely the most intractable sources of contention between claims-making groups. My analysis identified and explored in great depth four significant sources of contention between opponents and proponents claims makers involved in the current risk situation needing some sort of resolution—risk communication, public trust/distrust, environmental equity, and tribal sovereignty. Although, the nature and the sources of conflict will vary from situation to situation, this study serves as an example of how a qualitative analysis of claims-making activity can identify sources of conflict and contribute to a better understanding of any given case of political stalemate.

A third policy implication of this study involves the importance of moving away from NIMBY explanations for the policy failure of hazardous waste management, which
fail to address the root problem and imply that there is no solution, and towards explanations that more completely and more accurately explain public responses to siting efforts. My analysis supports Gramling and Freudenburg's (1992) argument that hazardous waste facility siting involves opportunity-threat impacts. The public perceives and responds to siting efforts in a variety of ways; some view such efforts as threats and some view them as opportunities, for instance. My analysis of opponent and proponent claims-making, which reflects a diverse array of public responses to the proposed project and in many ways parallels this notion of opportunity-threat impacts, indicates that policy solutions require much more than a simple awareness that there is widespread public opposition to siting efforts. Those attempting to address policy failure issues need to understand precisely why the public feels threatened by hazardous waste facilities. They also need to be more aware of and gain a much better understanding of public support for such facilities.

Finally, this risk study has some important policy implications related to tribal sovereignty, an issue of increasing significance in relation to hazardous waste management. Tribal sovereignty, as it relates to hazardous waste policy, is becoming a source of social and political contention, a trend that can be expected to continue given the frequency with which Native American tribes are now solicited as a part of facility siting efforts by the industry and by government agencies. It is therefore crucial that the role of tribal sovereignty in developing environmental policy on tribal land and especially in determining the fate of specific siting efforts on Indian reservations is, in no vague terms, well defined and understood. My analysis of opponent and proponent claims-making concerning tribal sovereignty reflects the degree to which this concept remains
ambiguous, socially, politically, and legally, even among members of the Goshute tribe.
The issue of sovereignty has clearly been a primary source of discord in the current risk controversy, and this should come as no surprise considering the amount of confusion surround the concept. We are at a critical juncture in which the outcome of current risk controversies involving Native American tribes, such as that being looked at here, will set important precedents for the future of hazardous waste policy on tribal land. The importance of adequately considering tribal sovereignty and related concepts when making policy decisions cannot be overlooked.

Limitations of Study

Like all research projects, this study has inherent strengths and weaknesses. The value of my qualitative approach lies in its ability to reveal aspects of the current risk controversy that are not quantifiable, namely the details and nuances that can only be known through a rich, in-depth description and analysis of differential definitions of the situation. In this way, qualitative approaches often provide us with a more complete or comprehensive picture of whatever it is we are studying. Qualitative analyses provide information that quantitative analyses simply cannot. However, although I reject the notion that qualitative research is invalid or unscientific, I recognize that it is lacking in certain respects. For instance, because of the qualitative nature of my data, I was not able to quantify the types of claims presented and thus could not compare them in terms of the frequency with which they appeared, at least not in any strict sense. Furthermore, a quantitative approach may have allowed me to look at a larger variety of types of claims, albeit in much less detail. Finally, my findings are not generalizable in the sense that
statistical findings are. In other words, what I discovered about claims-making in this particular situation may or may not be true about claims-making in other risk situations. This is less problematic than it may appear to be, however, as my results are not intended to be representative of all risk situations. In fact, this study was much more concerned with emphasizing the uniqueness of this situation in order to demonstrate the importance of social context. As such, this study could potentially serve as a model for similar types of qualitative studies.

Another limitation of this study is that the nature of my data was such that I was somewhat restricted in terms of the types of questions I could answer. For instance, I believe it would have been both interesting and valuable to compare the claims-making of tribal members and non-tribal members within the broader categories of opponents and proponents. It is seems likely that there would be important differences in claims presented by the Native American community and those by the non-native community, especially in relation to trust, equity, and tribal sovereignty. Unfortunately, however, claims maker socio-demographic characteristics were not collected, precluding this type of comparison.

In addition, there are two critical aspects of the claims-making process that I was unable to address given the limitations of my data. The first has to do with the role of power in claims-making. The issue of power as it relates to claims-making and the social construction of risk has been explored to some degree by theorists writing in neo-Marxist or conflict traditions. The basic premise underlying this perspective is that risks are not socially constructed in isolation from power relations that exist in society and that the social construction of risk involves the imposition of claims by dominant groups on less
powerful groups (Renn 1992). In the current situation, there are certainly power differentials to be considered, particularly those that exist between government officials and their constituents and between the scientific community and the lay population. The presence of these power relations may very well have contributed to the persuasiveness or effectiveness of opponent and proponent groups. However, because my data did not include socio-demographic or group membership information, I was not able to explore this possibility.

A second aspect of the claims-making processes that this research neglected has to do with audience receptiveness, or the extent to which claims-making influences broader collective definitions of the risk situation at hand. In other words, whose version of the risk situation (opponent or proponent), if either, will become the socially and politically accepted version? Furthermore, to what extent, if any, did the claims-making activity of each group influence policy outcomes? I was obviously unable to address these questions, primarily because answers to the questions are not yet available. My analysis was designed to look at one aspect of one phase of the claims-making process, namely, the process by which opponent and proponent groups present claims in the sociopolitical arena. In effect, my analysis focuses on but one piece of the puzzle. Other phases of the process are undoubtedly equally as important and deserve to be included in future research.

Conclusion

On one level, this case study is very much typical of the risk controversies that increasingly characterize hazardous waste management. That is to say, it is a case of
policy gridlock largely defined by conflicting definitions of the risk situation that are mobilized in the sociopolitical arena by competing groups. In the context of this specific controversy, opponent and proponent groups utilized the sociopolitical arena (in this case local newspapers and public hearings) to present claims regarding the proposed hazardous waste repository in an attempt to influence broader societal definitions of the project and of risk situations more generally. In other words, opponent and proponent claims-making can be viewed as an effort to affect politically and socially accepted social constructions of risk situations so as to impact policy outcomes. As discussed previously, though claims makers may or may not have truly intended to influence the NRC's decision in this particular case, their efforts to change social constructions on a societal level may serve to influence how risk related decisions are made in the future.

My analysis revealed that in presenting their claims, opponent and proponent groups made differential use of various frames, particularly environmental risk, trust and distrust in government and in science and technology, environmental equity, and tribal sovereignty. Not only were these concepts defined in different ways by the two groups, they were utilized to varying degrees and in varying contexts in opponent and proponent claims-making. Essentially, these four frames served as rhetorical tools for claims-making groups, who manipulated their meanings in a way that would strengthen their positions. In framing the risk situation along these four dimensions, opponent and proponent claims makers generated two very different versions of the proposed facility with conflicting policy implications.

Above all, this study has demonstrated that differential framing is at the root of the sociopolitical conflict defining this risk controversy and likely, other risk controversies like
Furthermore, a true understanding of this type of sociopolitical conflict necessitates a close examination of the claims-making activity through which differential framing occurs. Assuming that environmental risks are socially constructed, which is a basic premise of this study, we can never presume to know the reality of any given risk situation nor can we presume that there is only one version of reality. We must instead uncover its meaning or meanings by looking closer at those processes through which meanings are generated, namely claims-making activity. Such analyses will inevitably reveal the existence of competing versions of reality, allowing us to get at the heart of the conflicts currently characterizing hazardous waste management.
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