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"It is Laced With Faults": American Indians, Public Participation and the Politics of Siting a High-Level Nuclear Waste Repository

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Abstract

In this article I analyze American Indian claims made during the siting process for a high-level nuclear waste repository at Yucca Mountain, Nevada. By utilizing the concepts of distribution and recognition (Fraser 2003) to analyze American Indian claims for financial compensation, cultural artifact/resource protection, and environmental justice I reveal the existence and extent of both objective and intersubjective obstacles preventing greater public participation in environmental decision-making. Through a textual/discourse analysis of public documents associated with the Yucca Mountain Project, my analysis demonstrates how distributive and recognitional injustices impede democratic participation in environmental decision-making, which contributes to the continuation of environmental inequality formation processes and environmental racism. Identifying the obstacles preventing greater democratic participation in cases such as the Yucca Mountain Project creates a starting point for theorizing and researching the applicability of "participatory action research" methods to complex decisions regarding technology and the environment.

Key Words

Environmental Justice, Indigenous Rights, Public Participation, Distribution, Recognition, and Radioactive Waste Disposal

A growing body of literature focuses on stakeholder participation, claims making and the perceived legitimacy associated with environmental decision-making procedures (Konopasek, Stöckelová, and Zamykalová 2008; Zavestoski, Shulman, and Schlosberg 2006; Futrell 2003a; Futrell 2003b; Rowe and Frewer 2000; Hunter and Leyden 1995; Szasz 1994; Fiorino 1990). Communities on different scales are increasingly facing important questions regarding technological development and environmental management. These questions often involve highly technical and specialized knowledge that the general public does not possess, and thus most people are forced to rely on the knowledge of technical and environmental experts (Beck 1992; 1999). But because the outcomes of these decisions will directly impact people's lives, individuals and social groups within these communities want a role in the decision making process (Pijawka and Mushkatel 1992). Thus the problem becomes how to give concerned individuals and social groups a voice in decision-making processes regarding technologically and environmentally intensive projects. The

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goal is to ensure the best possible decisions are reached, and to ensure these decisions are viewed as being as legitimate as possible. The difficulty arises from trying to interject democratic ideals of participation and choice into policy frameworks that are shaped by technocratic arguments and complex issues of technology and environment (Futrell 2003a).

Issues of public participation in decision-making procedures have also become increasingly important for critical environmental justice scholars. Especially following the seminal works of Schlosberg (2003; 2007), scholars have begun taking the multiple, shifting meanings of the term "environmental justice" as an entry point for empirical research (Holifield, Porter, and Walker 2010). Building on the works of Young (1990), Fraser (2000; 2003), Sen (1999), and Nussbaum (2000) many scholars have developed an understanding of environmental justice that incorporates ideas of distribution, recognition and participation (Harrison 2011; Holland 2008; Di Chiro 2008; See also Wright 2010 and Somers 2008 for discussions of multidimensional conceptions of justice outside the environmental sphere). For example, Harrison (2011) uses the concrete example of pesticide drift activism to demonstrate the necessary and useful role theories of distribution, recognition and participation play in socially just approaches to environmental problem solving. She identifies the increasingly important role these theories of justice play in environmental politics, how they evolved, and what the material and social consequences are for people. More specifically, she shows how environmental problems and inequalities are as much about different understandings of what justice means as they are about technical issues or lapses in individual judgment. From this perspective, "…social inequalities and relations of oppression complicate our abilities to understand and solve environmental problems" (Harrison 2011: *xiii*).

One consistent theme in much of this critical environmental justice research is the myriad ways environmental justice activists link issues of environmental injustice with issues of social inequalities and race (Holifield et al. 2010). It is in these conceptual links between environmental injustices and other social problems that the importance of democratic participation becomes clearly evident. Poor and/or minority communities are exposed to a disproportionate amount of environmental burdens. The United Church of Christ's 2007 follow-up report *Toxic Wastes and Race at Twenty* applies 2000 Census data and distance based methods to a current database of commercial hazardous waste facilities, and finds racial disparities in the distribution of hazardous wastes are greater than previously reported. In fact, these methods show that people of color make up the majority of those living in host neighborhoods within 3 kilometers (1.8 miles) of the nation's hazardous waste facilities. Racial and ethnic disparities are prevalent throughout the country (UCC 2007). These inequalities result, in part, because these communities

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often lack the political, economic and/or social power to influence the decisions that could potentially mollify the environmental inequalities affecting them. Thus, understanding the obstacles preventing greater democratic participation in environmental and technological decision-making procedures is essential for understanding and overcoming broader processes of environmental inequality formation (Pellow 2000). Additionally, understanding these obstacles creates a starting point for discussions of increasing democratic participation and the applicability of various participatory action research (PAR) methodologies.

American Indian participation in the siting process for a high-level nuclear waste repository (HLNWR) at Yucca Mountain, Nevada provides an informative case that can be used to advance both multidimensional theories of justice and the environmental justice literature. The decision to site a HLNWR at Yucca Mountain was a complex technical, political, and social process that suffered from the problems of trying to interject democratic participation into a process dominated by bureaucratic and technical modes of decision-making. The Yucca Mountain case is highly-important in the U.S. context because it concerns the continued use of nuclear power in the U.S. to meet growing energy demands and reduce greenhouse gas emissions. As policymakers consider the first expansion of nuclear power in the U.S. in thirty years, the issue of what to do with the nation's 64,000 metric tons of high-level radioactive waste is becoming increasingly vital. Both critics and proponents of nuclear technologies have long seen the development of a permanent high-level nuclear waste storage facility as critical for the continued development of commercial nuclear energy production in the United States (Walker 2009; Jacob 1990). Currently, spent fuel rods from the nation's 104 nuclear power reactors, which constitute the bulk of the country's commercial high-level nuclear waste, are stored on-site at reactor facilities in either water-filled vaults or in steel-reinforced concrete casks. In 1987 Yucca Mountain, Nevada, located 90 miles north of Las Vegas in the Western Shoshone nation of Newe Segobia, was selected by an act of Congress to house the nation's first and only high-level nuclear waste repository (HLNWR). Since that time social, political, and scientific conflicts and uncertainties have plagued the geologic repository project (Vandenbosch and Vandenbosch 2007; Macfarlane and Ewing 2006).

I build upon sociological and normative theories of justice and apply the normative standard of participatory parity to analyze American Indian participation in the siting process for a HLNWR at Yucca Mountain, Nevada. Although many individuals and groups have been involved in the project over the past two decades, examining the participation of American Indians is important for several reasons. In 2007 the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted to further develop international norms regarding

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the individual and collective rights of indigenous peoples. The UNDRIP emphasizes the rights of indigenous peoples to pursue their development in keeping with their own needs and aspirations, and it promotes their full and effective participation in all matters that concern them and their right to remain distinct and to pursue their own visions of economic and social development (UNDRIP 2007). Given the clear, unwavering opposition to the Yucca Mountain Project expressed by American Indian groups in the region (see below), further pursuing this project would violate the intent of the UNDRIP by diminishing or removing American Indian control over development and other decisions that concern them.

Furthermore, as residents of the Great Basin, American Indian groups such as the Western Shoshone and Southern Paiute are the most geographically proximate stakeholders. The relatively disenfranchised political and social positions held by American Indians in the U.S. also makes their participation in the project especially illustrative of the general problems inherent in inserting democratic ideals of public participation into decision-making procedures dominated by technocratic rationalism. Perhaps most importantly, American Indian groups and other indigenous peoples around the world are the most frequent (but not sole) victims of radioactive racism (Kamps 2010; Kuletz 1998) and/or radioactive colonialism (LaDuke 2002a; 2002b; Churchill and LaDuke 1986). Radioactive racism and radioactive colonialism refer to the historical and contemporary practice of targeting indigenous' lands and peoples for nuclear operations, including uranium mining, weapons testing, and radioactive waste disposal, among others. The proposed construction of a HLNWR at Yucca Mountain would be a significant continuation of this colonial-like relationship between the U.S. federal government and sovereign American Indian tribes.

By building upon sociological and normative theories of justice and applying the normative standard of participatory parity to American Indian political claims made during the Yucca Mountain siting process, I am able to achieve two interrelated goals. First, utilizing the concepts of distribution and recognition I am able to analyze American Indian claims relating to issues of financial compensation, American Indian cultural artifacts and resources, and environmental justice. I discursively analyze these claims in order to determine which paradigm and/or logic of social justice they are drawing from and rearticulating. This enables me to identify the objective and intersubjective obstacles preventing more effectual public participation in environmental and technological decision-making procedures. In this case, these objective and intersubjective obstacles to political participation result in the continuation of radioactive racism, and are thus crucial for understanding environmental inequality formation processes more generally. Secondly, identifying the obstacles limiting greater democratic participation creates a starting point for theorizing and researching the applicability of

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different types of decision-making methods to cases such as the Yucca Mountain Project. More specifically, I consider the possible advantages of "participatory action research" (PAR) methods that are designed to be genuinely democratic and non-coercive process whereby those to be helped determine the purposes and outcomes of their own inquiry (Wadsworth 1998). PAR results in action which is researched, changed and re-researched within the research process by participants, and is based on active co-research by and for those to be helped. I argue incorporating PAR methods into the decision-making procedures of the Yucca Mountain controversy (and other similar cases) would increase the public legitimacy of those decision-making procedures, and would ultimately lead to better decisions being reached.

DISTRIBUTION, RECOGNITION AND PARTICIPATORY PARITY

All emancipatory social theory is based implicitly or explicitly on a theory of justice; some idea of what conditions have to be met in order for the institutions of a society to be correctly deemed just (Wright 2010:12-3). Furthermore, scholars such as Fraser (2000; 2003), Young (1990), and Schlosberg (2007), have shown some aspects of social and environmental (in)justice are only revealed through an empirical analysis of real-world struggles *for* social and environmental justice. In other words, recent developments in justice theory have revealed the limitations of the Rawlsian framework (which begins from abstract, philosophical principals of need, desert, and entitlement) for illuminating the nature of justice both theoretically and in practice (Walker 2010). Rawlsian theories of justice are primarily concerned with distributional justice—who gets what, where, and how much. As important as issues of distribution are, environmental justice activism has always been about more than who gets what in the environment.

The political-philosophical writings of Fraser (2003) provide especially valuable concepts for revealing how political claims for social and environmental justice aim to address different dimensions of social and environmental injustice. Beginning with an empirical analysis of real-world injustices targeted by feminist and racial justice movements, Fraser (2003) shows sociopolitical claims for justice can be conceptualized as being divided into two types, corresponding with two folk paradigms of social justice. The more familiar and long-standing of these are claims for "redistribution", which seek to establish a more equitable distribution of income, wealth, and other resources. Examples include claims for the redistribution of wealth from the Global North to the Global South, from the rich to the poor, from owners to workers. In recent decades, however, we have increasingly encountered a second type of claim, as represented by the politics of "recognition". Claims for recognition seek to establish cultural patterns of valuation that are "difference friendly"; where assimilation into dominant cultural norms

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and practices is no longer the price for equal respect. Examples of these include claims for the equal respect of gender, ethnic, racial, and sexual minorities' distinct perspectives. The UNDRIP, for example, is a good example of established normative standards that are based upon the politics of recognition. The UNDRIP seeks to increase international attention and secure increased recognition of the concerns, interests, and perspectives of indigenous peoples, because the misrecognition of these has lead to human rights abuses around the world.

Of course, many examples of social division are in fact two-dimensional. Fraser (2003) characterizes two-dimensionally subordinated groups as suffering from both *maldistribution* and *misrecognition* "…in forms where neither of these injustices is an indirect effect of the other, but where both are primary and co-original" (Fraser 2003:19). Familiar examples of this are social divisions based on race and gender, where neither cultural patterns of valuation nor resource distribution can be reduced to the other, but instead, both produce separate, but interdependent, obstacles to social justice. In cases like these, the emancipatory aspect of the two paradigms above needs to be integrated into a single comprehensive framework, or a "two-dimensional conception of justice". This two-dimensional conception of justice needs to be able to accommodate defensible claims for social equity and defensible claims for the recognition of difference.[1]

The normative core of Fraser's (2003) two-dimensional conception of justice is what she calls "participatory parity". According to the normative standard of participatory parity, social justice and democratic equality require social arrangements that permit all (adult) members of society to interact with one another as peers. This requires that the distribution of material resources be such as to ensure participants' independence and "voice". This "objective condition" of participatory parity precludes social arrangements that institutionalize deprivation, exploitation, and disparities in wealth, income, and leisure time, which would deny some people the means and opportunities to interact with others as peers. In addition, the "intersubjective condition" of participatory parity requires that institutionalized patterns of cultural value express equal respect for all participants and ensure equal opportunity for achieving social esteem. This second condition precludes institutionalized norms that systematically depreciate some categories of people and the qualities associated with them. As my analysis shows, claims made by American Indian participants in the Yucca Mountain Project incorporate both types of claims for social justice. Thus my analysis reveals the existence and extent of both objective and intersubjective obstacles preventing greater participatory parity, which contribute to the environmental inequality formation processes in this and other cases.

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THE HIGH-LEVEL NUCLEAR WASTE REPOSITORY AT YUCCA MOUNTAIN, NEVADA

The need for a permanent nuclear waste storage facility has a long political history with regard to both scientific and institutional issues (Walker 2009; Vandenbosch and Vandenbosch 2007; Macfarlane and Ewing 2006; Jacob 1990; Erikson 1994; Nevada Agency for Nuclear Projects 2002; Urban Environmental Research 2002). High-level nuclear waste consists of spent fuel rods and other highly radioactive materials produced by fission in nuclear reactors. Beginning in the 1970s, high-level nuclear waste became an important topic in the debate regarding the future of nuclear technologies in the U.S. Optimistic industry and government engineers assured citizens that the technology needed to safely seal and store high-level nuclear waste in an underground repository was in hand (Walker 2009; Jacob 1990; Erikson 1994). Continued political conflict around the issue resulted in the 1982 Nuclear Waste Policy Act (NWPA), and the subsequent amendments passed in 1987 (NWPAA). The initial NWPA identified nine possible sites for an underground geological repository in six states, the 1987 NWPAA narrowed the field to just one site; Yucca Mountain, Nevada. In effect, this left the state of Nevada and the Western Shoshone Nation holding the site of the nation's only high-level waste repository unless some fatal flaw was discovered in the site characterization process. It has been argued that the selection of Yucca Mountain was not the result of an organized, scientific evaluation of possible sites in different locations, but rather was the result of political positioning and expediency (Vandenbosch and Vandenbosch 2007; Jacob 1990).

Shortly after the passage of the NWPAA in 1987, the Department of Energy (DOE), which is the federal agency responsible for the siting, construction, operation, and maintenance of the HLNWR, instituted the Native American Interaction Program. This was an attempt by the DOE to initiate long-term research relating to the inventory and evaluation of American Indian cultural resources in the Yucca Mountain area. In order to prevent the loss of ancestral ties to the land in southern Nevada, 17 American Indian tribes and organizations from the Native American Interaction Program aligned themselves together to form the Consolidated Group of Tribes and Organizations (CGTO). Related to the mandate of the Interaction Program, the primary objective of the CGTO has been the protection of cultural resources and environmental restoration.

METHODOLOGY

In order to conduct this research I performed textual analysis on two American Indian Resource Documents, which are associated with the DOE's Environmental Impact Statements for the HLNWR at Yucca Mountain, and the "rail-corridor" project being designed to facilitate the

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shipment of high-level nuclear waste to the repository. These documents were produced by the American Indian Writers Subgroup of the CGTO, and provide summaries of the opinions expressed by the CGTO throughout their participation in the Interaction Program. Although these documents were produced in response to the DOE's "Repository EIS" and the "Rail Corridor EIS", they also integrate relevant recommendations and insights from Indian people formed throughout their dealings with the DOE and other federal agencies (AIWS 1998). Additionally, I performed textual analysis on transcripts of public hearings associated with the Yucca Mountain project (YMP) that occurred between 1992 and 2003, as well as on research reports sponsored by and prepared for the State of Nevada.[2] Because my intent was to reveal and analyze obstacles preventing more effective public participation in environmental decision-making procedures, which contribute to environmental inequalities, these documents provided a solid sample of American-Indian's official, political participation in the YMP.

Textual analysis is a technique for gathering information about how human beings make sense of the world (McKee 2003; Hoey 2000; Fairclough 2003). More specifically, textual analysis is a method of interpreting texts in order to obtain an understanding of the ways in which people construct meaning through language and interaction.[3] As such, textual analysis is a qualitative methodology that allows for the organized and systematic study of how sociopolitical claims are formed, disseminated, and received. My analysis was conducted through an intensive focus on public documents associated with the YMP. My goal was to illuminate the patterns, linkages and structures of the claims made by American Indian participants, which themselves reveal the existence and extent of obstacles preventing more meaningful public participation.

My analysis was conducted using a two-stage process. The first stage involved an initial round of preliminary coding, whereby I ordered my materials into categories representing more general factors. This allowed me to organize American Indian claims into topical categories relating to issues of financial compensation, American Indian artifacts and resources, and environmental justice. While these categories are obviously not exhaustive of all possible ways of conceptually organizing American Indian claims in this case, the utility of this typology can be judged on the basis of how well it illuminates the dynamics of the case in question, and provides insight into more general social processes.[4] The second stage was much more intensive and included most of the analysis. More specifically, I analyzed the claims in each of these categories in relation to the concepts of redistribution, recognition, and participatory parity. I discursively analyze these claims to determine which logic and/or paradigm of justice (i.e. distribution or recognition) they are based upon and further rearticulate. I did this by determining whether the

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issues were articulated as being the result of *unjust differences* between individuals and social groups (representing the politics of distribution) and/or the result of *unjust denial of differences* between individuals and social groups (representing the politics of recognition). In this way, my analysis reveals the existence and importance of both objective and intersubjective obstacles to effectual American Indian participation in the project, which contribute to the continuation of radioactive racism and environmental inequality formation processes.

The objective of the following analysis is to build upon sociological and normative theories of justice, especially Fraser's (2003) concepts of redistribution, recognition, and participator parity, as a framework for the empirical analysis of American Indian claims making and participation in the YMP. This analysis enables me to reveal the objective and intersubjective obstacles preventing more effective public participation, which contribute to radioactive racism in this case and environmental inequalities more generally. As I will show, the three most commonly expressed types of claims made by American Indian participants all address objective and/or intersubjective obstacles to the realization of greater participatory parity. This analysis, therefore, sheds new light on the general problems of inserting democratic participation into environmental and technological decision-making procedures, which contribute to environmental inequalities.

FINANCIAL COMPENSATION AND THE POLITICS OF DISTRIBUTION

One of the central findings from my analysis is American Indian claims for funding and financial compensation reveal a primarily "objective" obstacle to the realization of participatory parity. These claims address the "objective condition" for participatory parity and seek a more just *distribution* of material resources to eliminate the structural, socioeconomic barriers that prevent American Indian participants from engaging in more meaningful participation in the YMP. Two commonly expressed areas of concern for American Indian participants are funding issues associated with emergency response preparation and YMP oversight. These issues are closely related, and both reveal how distributional injustices can impede democratic participation in technological/environmental decision-making, which contributes to environmental inequality formation. Additionally, identifying these "objective" obstacles creates space for theorizing and further research into the applicability of PAR methods to improve these kinds of decision-making procedures.

Emergency Response

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Claims concerning emergency response preparation reflect American Indian tribal government's and American Indian participant's fears of not being able to respond to an accident or spill involving high-level nuclear waste in the vicinity of their homes and reservations. An accident or spill of this sort represents a worst-case-scenario for American Indians residing along the proposed transportation corridors, and their desire to be prepared for such an incident is reflected in a claim made by an American Indian participant at a public hearing in 2000:

> I especially brought to the attention of the tribes the matter of emergency response and preparedness and how we, as tribes, are unprepared at this time and how the federal government and other agencies can look upon the tribes to assume that responsibility. And as we stated, we lack training. We lack staff. We lack equipment. We lack funds to be prepared for any kind of spills near us… (Desert Research Institute 2000:17).

American Indian perceptions of being dangerously unprepared and underfunded reflects an objective obstacle to participatory parity that could be mollified with an adequate distribution of funds for emergency preparation. Considering billions of dollars are being spent on determining the suitability of Yucca Mountain as the location for the HLNWR, it would seem adequate funding should be provided to ensure Yucca Mountain's closest neighbors feel prepared for any kind of dangerous incident resulting from the YMP (Walker 2009; Vandenbosch and Vandenbosch 2007; Macfarlane and Ewing 2006). Additionally, this seems to be an area where the application of PAR methods could be especially useful. Because American Indian tribes and organizations would be critical in any kind of emergency response scenario, research and preparation would benefit from involving them in research question formation, data acquisition, analysis and interpretation. This would, of course, require an adequate and just distribution of material resources.

When asked to address the issues of American Indian tribal emergency response preparation and funding at a public hearing in 2003 a DOE representative dismissingly repeated the relevant portions of the NWPA:

> The NWPA recognizes the role of tribal governments. Section 180(c) of the Act requires the Secretary of Energy to provide technical and financial assistance and funds to states and Native American tribes for training public safety officials of appropriate units of local government and tribes through whose jurisdictions DOE

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> would transport spent nuclear fuel or high-level radioactive waste… (Eureka County 2003:127).

The DOE spokesperson then redirected the discussion away from the issue of funding for tribal emergency response preparation towards a discussion of liability coverage:

> …The Price-Anderson Act provides liability coverage for…DOE activities by establishing a system of private insurance and Federal indemnification that generally ensures…$9.45 billion is available to compensate for damages suffered… (Eureka County 2003:127-8).

This avoidance of the issue and subsequent redirection of the discussion did not go unnoticed by the American Indian participants in the meeting, as expressed by the claim made immediately following the DOE representative's claim:

> DOE's response to this comment is appreciated. However, the extent of the training and exact amounts of funding that will be provided to tribal governments - or any affected unit of government - for emergency response has yet to be disclosed (Eureka County 2003:128).

The commenter went on to note the Price-Anderson Act provides no liability coverage unless there is an unanticipated release of radioactivity, and even then, potential victims would have to sue the DOE in court, and prove their injuries were the result of said release, which would be expensive and difficult to achieve.

Scientific Oversight

Closely related to issues of funding for American Indian preparation for potential emergency response scenarios are issues of funding for American Indian scientific evaluation and oversight of the YMP. American Indian participants in the YMP feel their involvement in the project has been unfairly limited to evaluating and protecting their cultural artifacts and resources. One stated reason for this limitation is the lack of funding and assistance provided to American Indians by the federal government and the DOE for acquiring their own scientific experts and knowledge to evaluate the technological aspects of the YMP. The issue is summarized nicely by an exchange that took place at a Tribal Update Meeting in 1992. In this meeting an American Indian participant commented:

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> Funding should be provided to tribes and Indian organizations for training, information gathering, and other YMP related activities. This recommendation does not preclude any group from applying for 'affected status' (AIWS 1998:B-14).

A DOE representative then responded:

> Currently, the YMP Native American/Cultural Resource Program is primarily focused on the protection of cultural resources in the Yucca Mountain area. Funding for activities beyond the current scope of work is not available at the present time. However, this issue is continually being addressed and the recommendation will be kept in mind as future discussions on this subject take place (AIWS 1998:B-14).

My analysis of the documents included in this study has failed to determine if the DOE's position on this matter has changed since 1992, which was during the early years of the YMP. However, the lack of documentation regarding increased funding for "activities beyond the current scope of work" and continued American Indian claims for increased funding for these kinds of activities suggests the DOE's position has not changed over the past fifteen plus years. For example, an American Indian participant in a 2001 public hearing made the following claim:

> I do think that tribes do need funding to get their expertise on the manner that all this [EIS] document is written… the way the documentation is written we need expertise to go through it and dissect it and give their opinions to the tribal councils and go from there. Without funding, this will never be done (Laurie Webb & Associates 2001:19-20).

Another American Indian participant at the same public hearing echoed the above commenter's sentiments by claiming:

> …there should be funding for the tribes in order to go through the technical documents. The State of Nevada has been funding counties in the area… and certainly sovereign tribal nations are on a level or above a level with counties and should also receive this funding in order to go through all these documents… (Laurie Webb & Associates 2001:19-20).

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As is evident from this discussion, American Indian claims regarding financial compensation aim to increase the level of parity between themselves and the DOE. More specifically, American Indian claims for increased funding for emergency response preparation and for increased funding for scientific expertise seek to address the structural, economic conditions that prevent greater American Indian participation in the YMP. The maldistribution of material and financial resources thus presents an objective obstacle to participatory parity, which contributes to the continuation of radioactive racism and environmental inequalities. Increased federal funding in both of these areas would increasingly allow American Indian tribes and participants to interact with county and state governmental units on equal terms. The claims made by DOE representatives on this matter seek to avoid the kind of economic redistribution that would result in this kind of parity between participants in the YMP. Redirecting the discussion when the issue is raised, and esoterically repeating the relevant legislation serves to ensure issues of increased funding for "activities beyond the current scope of work" are not meaningfully discussed. In order to achieve meaningful public participation in cases like the YMP, responsible agencies will need to ensure all participants have access to the financial and material resources required for all participants to take part in the decision-making processes on reasonably equal footing.

AMERICAN INDIAN CULTURAL ARTIFACTS AND RESOURCES AND THE POLITICS OF RECOGNITION

The primary concern of the Consolidated Group of Tribes and Organizations (CGTO) has been the protection of American Indian cultural resources and environmental restoration, as required of the DOE by the American Indian Religious Freedom Act of 1996. This act, along with other legislation, specifically reaffirms the First Amendment rights of American Indians to have access to lands and other resources that are essential to the practice of their traditional religion (AIWS 1998). In this case, the DOE recognizes American Indian cultural artifacts as ancestral burials, pictographs (rock art), and other archaeological sites and artifacts, but the DOE considers each of these in isolation from the others. This atomistic practice extends to the DOE's conceptualization of American Indian cultural resources, where analysis of potential risks to the air, water, plant and animal life are conducted separately, ignoring the holistic conceptualizations repeatedly expressed in American Indian claims. For example, the 1998 AIRD states:

> American Indians believe that we have the responsibility to protect with care and teach the young the relationship of the existence of a non-destructive life on Mother

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> Earth. This belief is the foundation of our holistic view of the cultural resources, i.e., water, animals, plants, air, geology, sacred sites, TCPs [traditional cultural properties], and artifacts. Everything is considered to be inter-related and dependent on each other to sustain existence (AIWS 1998:2-9).

The "holistic view of cultural resources" expressed above stands in stark contrast to the DOE's method of operation concerning the assessment of American Indian cultural artifacts and resources, as critiqued by American Indian participants in the 1998 AIRD:

> Conversely, it is common archaeological practice to look at areas as distinct sites. Thus a rock shelter, a camping area, or a spring surrounded by broken pottery can be located within a few hundred yards or farther from one another and be assigned three different site numbers (AIWS 1998:2-9 – 2-10).

Another finding from my analysis is the primacy of technical scientific criteria, and the resulting *misrecognition* of American-Indian perspectives, presents an intersubjective obstacle to participatory parity and meaningful American Indian involvement. More specifically, the intersubjective condition for participatory parity is not met in this case due to cultural patterns of valuation expressed by the DOE that depreciate and undermine the perspectives and knowledge of American Indians. If participatory parity is to be achieved, along with more meaningful public participation, then the "holistic view" of American Indians concerning their cultural artifacts and resources need to be positively and institutionally revalued by the DOE. This is especially true when this involves sovereign American Indian nations, who are constitutionally entitled to government-to-government relations with the United States. However, getting the DOE to positively revalue American Indian perspectives has proven to be extremely difficult in this case. An exchange that took place between an American Indian participant and a DOE representative in a public hearing in 2003 exemplifies this problem. The American Indian participant commented:

> The earth is alive-earthquakes are a reality and Yucca Mountain is a very geologically active area, it is laced with faults. It is foolish to think that the mountain can contain this waste for thousands of years, water and air both flow through the mountain. The mountain breaths (Eureka County 2003:120).

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A DOE representative then responded with a very long, detailed description of the statistical risk analysis procedures employed by the DOE during the HLNWR siting process, some of which is reprinted as follows:

> The EIS does contain analysis of impacts that could arise from natural catastrophic events such as earthquakes and volcanic activity. While the DOE cannot predict such events exactly, it can incorporate them statistically into risk analysis…For probabilistic analyses such as that performed to evaluate potential impacts from igneous disruption events in the EIS, a Monte Carlo method was used whereby a number of realizations using different sets of input parameters are added together to give the total probability-weighted dose (Eureka County 2003:120-1).

The disconnect between the world view of the DOE representative and the world view of the American Indian participant, and the resulting misrecognition of American Indian perspectives and concerns, was not lost on the American Indian participants in the hearing:

> DOE's response to this comment only serves to highlight the disconnect between DOE's professed commitment to honor the concerns of the Native American community, and the lack of seriousness with which it actually addresses these concerns…DOE has responded by merely outlining the minute, esoteric calculations of the probability and risk with which it purports to be able to predict the future (Eureka County 2003:123).

These conflicting understandings reveal an intersubjective obstacle to achieving participatory parity in this case, resulting from the misrecognition of American-Indian worldviews. On the one hand, the DOE recognizes American Indian cultural artifacts and resources to be directly observable, discrete entities, which can be evaluated in isolation from each other. Consequently, the DOE sees no problem with conducting hydrological studies separately from airflow studies, or with conducting surveys of American Indian plant consumption separately from surveys of archaeological sites and artifacts. American Indian participants, on the other hand, recognize their cultural artifacts and resources are necessarily interconnected with one another, and hold that any attempt to study these resources and artifacts in isolation from each other necessarily neglects the larger interconnected meanings.

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In order for more meaningful public participation to be achieved in cases like the YMP, responsible agencies will need to positively and institutionally revalue the perspectives of concerned individuals and social groups. This could be achieved through the implementation of PAR methods where the subjects of the analysis (in this case American Indian groups) are involved in every step of the research process; from question formation, to data acquisition, interpretation, the generation of conclusions and recommendations, and finally new rounds of analysis. PAR methods seem especially promising with regards to cultural artifacts and resource studies, because the Western Shoshone and Southern Paiute people are the foremost "experts" on the subject of their cultures. That is unless the DOE believes they and their archeologists and anthropologists are somehow better situated to conduct such studies.

ENVIRONMENTAL JUSTICE AND THE INTERSECTIONS BETWEEN THE POLITICS OF DISTRIBUTION AND THE POLITICS OF RECOGNITION

The third major finding of my analysis is American Indian claims for environmental justice simultaneously address issues concerning the misrecognition of American Indian's unique perspectives and concerns related to the YMP, and the maldistribution of environmental hazards and burdens. Thus, American Indian claims for environmental justice empirically reveal the interconnections between objective and intersubjective obstacles to participatory parity.

On February 11, 1994 President Clinton signed EO 12898 which mandated each federal agency achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations (AIWS 1998). More specifically, federal agencies, such as the DOE, were instructed to (1) promote enforcement of all health and environmental statutes in areas with minority and low-income populations, (2) ensure greater public participation in decision making, (3) improve research and data collection relating to the health and environment of minority and low-income populations, and (4) identify differential patterns of consumption of natural resources among minority and low-income populations (AIWS 1998).

Beyond these general environmental justice directives, American Indian claims making during the YMP has also led to the identification of specific concerns related to environmental justice for American Indian communities. These concerns specific to American Indians working on the YMP seek to expand current conceptualizations of environmental justice policy. This is demonstrated in the following claim taken from the 1998 AIRD:

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> The CGTO has other concerns that fall within the context of EO 12898. More specifically, the issue of subsistence consumption which requires the DOE to collect, maintain, and analyze information on consumption patterns such as those of Indian populations who rely principally on fish and/or wildlife for existence (AIWS 1998:2-18).

The above claim raises issues of environmental justice that are unique to American Indians in this case, and also demonstrates American Indian's fears of irreparable damage to their way of life because of the YMP. Additionally, the potential for holy land violation and cultural survival-access violations are also of special concern to the CGTO:

> There is no question that the holy lands of Indian peoples have been, continue to be, and will be [negatively] impacted by government actions. There is no question that only Indian people have lost cultural traditions because they have been denied free access to many places on federal lands where ceremonies have or need to occur, where plants need to be gathered, and where animals need to be hunted in a traditional way (AIWS 1998:2-19).

American Indian concerns regarding irreversible damage to their cultural lifeways are not limited to these small scale issues of holy land and cultural survival-access violations, but also include concerns regarding disruption to larger scale intertribal relations.

> The process of fragmentation of Indian nations into small, increasingly isolated communities began with Euroamerican settlement and continued with the right-of-way reservation of YMP lands. The loss of cohesion has lowered the ability of Indian people to (1) negotiate, (2) resolve conflicts, (3) keep peace, and (4) share resources (AIWS 1998:2-23).

The DOE's position regarding environmental justice for American Indians associated with the YMP, as expressed in the claims made by DOE representatives, frames the issue in terms of statistical probabilities, which neglects the cultural concerns raised by American Indian participants. An exchange that took place between a DOE representative and an American Indian participant in a public hearing in 2003 exemplifies the different understandings of environmental justice in this case. An American Indian participant commented:

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> In this cultural concept, when you're taking this down to Yucca Mountain, the transportation, we are talking about genocide. And we [Western Shoshones] have long been participants in this…And the radiation that comes from this transportation, we will be the long-term participants in that, and the people that live here will be also. But the animals that live there will bring it back to us, and we'll have double jeopardy because that's part of our traditional foods (Eureka County 2003:125-6).

To which a DOE representative responded:

> The public health effects from incident-free transportation of radioactive materials is dependent on four factors: the radiation rate at the surface of the cask, the distance from the passing cask to the individual, the duration of each exposure, and the number of shipments which pass by the individual. None of these factors vary from individual-to-individual within segments of the general population, and therefore the public effects of transporting radioactive materials would be the same for Western Shoshones as it would be for individuals in any other segment of the general population (Eureka County 2003:126).

The DOE apparently rests content that the Western Shoshones (given the same radiation exposure) are not unusually susceptible to radiation sickness. However, not only does the DOE representative's claim not address the cultural component of the claim made by the American Indian participant concerning environmental justice, but it also contains a clear logical fallacy that circumvents the intention of EO 12898. The DOE representative states that none of the four factors that determine the public health effects of transporting radioactive materials vary from individual-to-individual *within* segments of the population, but says nothing about the variation *between* one segment of the population and another segment of the population. As a segment of the general population, the Western Shoshones, due to their proximate location to Yucca Mountain, will be impacted by the four factors that determine the public health effects of radioactive waste transportation to a greater degree than populations in other locations. Therefore, it is incorrect to conclude that the public effects of transporting radioactive materials to Yucca Mountain will be the same for Western Shoshone individuals as for other individuals in other segments of the population. In addition, EO 12898 specifically addresses minority and low-income *populations*,

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not *individuals* within segments of the population. DOE's attempt to refocus environmental justice discussions on individuals rather than on populations represents a fallacious attempt to ignore environmental justice mandates.

The apparent flaws in the DOE's reasoning did not escape the attention of American Indian participants, as shown in their claims made during a public hearing in 2003:

> The Western Shoshone will be more profoundly impacted both culturally and environmentally…than perhaps any other minority group in the nation…According to the EIS, "no disproportionately high and adverse impacts would result from the Proposed Action [construction of the HLNWR]". This is perhaps the most outrageous statement contained in the document. It reflects either complete ignorance with respect to the concept of environmental justice, or a complete lack of respect for the cultural ties of the Western Shoshone (Eureka County 2003:131).

The claims made by American Indian participants in the YMP regarding environmental justice are directed towards achieving greater participatory parity between themselves and other actors in the process. These claims empirically reveal the existence and importance of objective and intersubjective obstacles to participatory parity, which further the dynamics of radioactive racism and environmental inequality formation. Claims made by representatives of the DOE addressing environmental justice, on the other hand, seek to continue the current level of parity between participants in the YMP. Specifically, the DOE, as expressed by the claims made by DOE representatives and the Yucca Mountain EIS, attempts to reframe the issue of environmental justice around statistical evaluations of public health effects of the project on individuals, rather than on the health effects on segments of the population. This rearticulation of the environmental justice discussion ignores the cultural concerns raised by American Indian participants, as well as circumvents the intention of the relevant environmental justice mandates, which addresses populations rather than individuals.

DISCUSSION

The siting of a HLNWR at Yucca Mountain, Nevada has been a decades-long process fraught with conflicts and uncertainties. After years of "site-suitability studies", on Feb. 14, 2002 then-Energy Secretary Spencer Abraham officially recommended to President Bush that a nuclear waste repository be developed at Yucca Mountain. The president approved the recommendation the next day. By July, both the U.S.

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House of Representatives and the U.S. Senate voted to override the State of Nevada's objections, and established Yucca Mountain, Nevada as the site for a nuclear waste repository. As instructed by the President, the DOE then began compiling the license application for the repository to be submitted to the Nuclear Regulatory Commission (NRC). But legal challenges and interventions by state and tribal governments and continued regulatory disputes prevented the DOE and NRC from meeting congressionally mandated milestones. The DOE completed its Draft Environmental Impact Statement, as required for the license application, in 2005. This marked the end of the American Indian Interaction Program and the work of the Consolidated Group of Tribes and Organizations. During his 2008 presidential campaign, President Obama promised to abandon the Yucca Mountain project, and in February 2010 it was announced the DOE would discontinue its applications to the NRC for a license to construct a repository at Yucca Mountain. Additionally, the Administration's Fiscal Year 2011 Budget stated all funding for development of the Yucca Mountain facility would be eliminated for fiscal year 2011. However, in April of 2010 the states of South Carolina and Washington filed suit against the DOE and President Obama claiming the Administration and the DOE lack the authority to withdraw the license application from the NRC, because this would violate the intent of Congress. The case is pending in the U.S. Circuit Courts.

Along with the termination of the Yucca Mountain project the Obama administration created the Blue Ribbon Commission on America's Nuclear Future (BRC) tasked with answering several key questions regarding the future of radioactive waste disposal in the U.S. The BRC is mandated to evaluate possible disposal strategies and issue recommendations in 2011 that are expected to become the basis of new federal radioactive waste policy. The Commission's charter emphasizes public participation and transparency in the Commission's proceedings, to address what the Commission perceives as significant social and political issues preventing more effective radioactive waste storage policy. While the future direction of nuclear waste policy in the U.S. is uncertain, all concerned agree a permanent geological-repository will need to be sited and constructed in order to safely isolate highly radioactive waste from the biosphere for hundreds of thousands to millions of years. In order for this crucial development to be realized, however, the obstacles preventing more meaningful public participation identified in this analysis will have to be addressed.

By analyzing American Indian's claims for financial compensation, American Indian cultural artifacts and resources, and environmental justice associated with the YMP, I am able to distinguish between the politics of distribution and the politics of recognition. This allows me to reveal the objective and intersubjective obstacles

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preventing more effective public participation in this case, which contributes to the environmental inequality formation processes and the continuation of radioactive racism. For instance, American Indian claims focusing on financial compensation bring to light objective obstacles to achieving participatory parity, which prevent more meaningful American Indian participation in the YMP. Regarding both funding for emergency-preparedness and emergency-response and funding for independent scientific evaluation of the project, American Indians repeatedly express how the maldistribution of financial resources limits their ability to meaningfully participate in the YMP. Because the tribes have not received as much funding as state and county governments, American Indians are not able to fully develop their input on the scientific and safety issues associated with the YMP. Consequently, American Indians continually expressed the opinion that a more equitable distribution of monetary resources is absolutely necessary for achieving more meaningful American Indian participation in the project.

As my analysis has shown, objective obstacles to meaningful democratic participation, involving issues of maldistribution, in practice combine with other intersubjective obstacles such as those related to the misrecognition of American Indian cultural artifacts and resources. American Indian participants claim the DOE misrecognizes the significance of, and interconnection between, their cultural artifacts and resources in the Yucca Mountain area. While it is common practice for the DOE to officially characterize American Indian ancestral burials, pictographs, and/or other archaeological sites as cultural artifacts, this is done with each cultural artifact being considered on its own, in isolation from other cultural artifacts and resources. When American Indians are asked to participate in this process they insist their cultural artifacts and resources can only be understood by considering the interconnections between them. Because the perspectives of American Indians concerning their cultural artifacts and resources are institutionally and procedurally devalued and depreciated in the DOE's operations, effective American Indian participation has been difficult to achieve. This clearly violates the UNDRIP by undermining American Indians' right to self-determination, and their rights to preserve and develop their cultures in keeping with their own desires and ambitions. Therefore, my analysis of American Indian claims making regarding the YMP has helped to identify both objective and intersubjective obstacles that prevent greater and more effective public participation in environmentally intensive development projects.

However, as is becoming clear from this discussion, the divide between claims for recognition and claims for redistribution is more analytical than actual; as is the divide between sociopolitical issues of misrecognition and maldistribution. In the practice of sociopolitical

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claims-making, claims for recognition and redistribution are often made together, and often times are used to supplement one another. This is especially evident in American Indian claims regarding issues of environmental justice. American Indian claims for environmental justice drew explicitly from both the paradigm of recognition and the paradigm of distribution, to address issues that result from both misrecognition and maldistribution. By claiming the YMP is a violation of federally mandated environmental justice principles, American Indian activists demand the DOE to properly *recognize* American Indian's conceptualizations of and connections with the Yucca Mountain area. In addition, this recognition of American Indian's cultural embededness in the physical/organic reality of the Yucca Mountain area then needs to inform a just *distribution* of environmental and technological burdens. Here the social justice paradigms of recognition and redistribution are seamlessly integrated around the concept of environmental justice in the claims of American Indians. Consequently, neither the full recognition of American Indian perspectives and concerns nor a just distribution of resources and burdens alone is enough to achieve environmental justice and participatory parity in this case. Only by fully recognizing American Indian perspectives and concerns *and* equitably redistributing resources for activities related to the YMP will the most meaningful public participation in the project be achieved.

While the future of the YMP remains uncertain, the need to safely seal and store the nation's high-level nuclear waste remains as pressing as ever. Whether or not a geologic repository at Yucca Mountain, Nevada proves to be the answer, the political process surrounding nuclear waste disposal needs to change in response to the objective and intersubjective obstacles faced by American Indian participants in the YMP. Moving forward Fraser's (2003) theory of participatory parity suggests the DOE should consider instituting a "participatory action research" program that could help overcome the obstacles preventing greater public participation in the decision-making process. Participatory action research (PAR) is research which involves all relevant parties in actively examining together current action (which they experience as problematic) in order to change and improve it. This is done through critical reflection on the relevant historical, political, cultural, economic, geographic and other contexts (Wadsworth 1998). PAR results in action which is researched, changed and re-researched within the research process by participants, and is based on active co-research by and for those to be helped. PAR strives to be a genuinely democratic and non-coercive process whereby those to be helped determine the purposes and outcomes of their own inquiry (Wadsworth 1998). PAR proceeds through repeated cycles, in which researchers and the community start with the identification of major issues, concerns and

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problems, initiate research, originate action, learn about this action and proceed to a new research and action cycle.

On the level of scientific and technical assessment, a PAR program could help overcome the issues of misrecognition preventing greater public participation by bridging the gulf between the DOE's atomistic understanding of risk assessment focused on isolated natural resources, and American Indian's holistic conceptions of their traditional environment, of which they see themselves as a part. If the DOE, and other agencies responsible for environmentally intensive development projects, truly want to increase public participation in decision-making processes in order to achieve environmental justice, then they will need to do more than just politely "document and consider" the concerns and perspectives of public participants. Responsible agencies need to formally and procedurally incorporate these concerns and perspectives into their operations, thus fully recognizing them. PAR seems to be one possible method for doing this. By including all relevant parties in all stages of the research process (from budgeting research priorities to question formation to data analysis and interpretation) PAR helps guard against institutionalized forms of misrecognition by allowing decisions to be informed by greater cultural pluralism. This could potentially result in new and better practices for protecting American Indian cultural artifacts and resources, and better methods for assessing the environmental justice impacts of the YMP. However, effective PAR requires all relevant parties have access to the resources necessary to conduct in-depth scientific investigations. Therefore, it is also necessary to address the objective obstacles preventing more effectual public participation. A more equitable distribution of material and institutional resources between affected parties would not only address the objective obstacles of financial compensation preventing greater American Indian participation, but would also create the conditions for addressing the intersubjective obstacles of misrecognition as well.

In the practice of environmental and technological decision-making, problems of maldistribution and misrecognition are mutually interdependent, as are the solutions to these problems. Because the construction and operation of a HLNWR is an entirely unprecedented scientific endeavor, involving complex formulations projected out over millions of years, it follows that the scientific basis for decision making should be as strong and comprehensive as possible. Only by eliminating the objective and intersubjective obstacles preventing greater American Indian participation in the YMP can agencies responsible for environmentally intensive development projects ensure the effective public participation required for sound and legitimate policy decisions is achieved.

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Endnotes

[1] While my analytic framework focuses specifically on issues of distribution and recognition, it is important to acknowledge this is not an exhaustive list of social justice issues. For instance, recent scholarship has begun focusing on issues of representation and political justice, human capabilities, as well as issues of retributive vs. restorative justice. However, for this analysis I limited the analytic framework to issues of distribution and recognition, because these conceptual categories encompass the material as well as the cultural aspects of the conflict.

[2] Only a fraction of the public hearings held relating to the YMP were transcribed, and of those, only a fraction has been archived. Appendix B in the 1998 AIRD provides transcripts of 10 public hearings and Tribal Update meetings ranging from April of 1992 - September of 1997. In addition, Eureka County, Nevada has electronically archived portions of public hearings held in that county related to the Repository EIS, which I was able to analyze. In total, I analyzed 127 pages of public hearing transcripts that included 186 separate claims; 92 of those claims reflected the paradigm of recognition and 94 the paradigm of distribution. Despite the limitations of this sample, the transcripts of public hearings provided me with much additional data on American Indian claims making during this process, and helped my analysis reflect the American Indian discourses on the project as accurately as possible.

[3] According to McKee (2003) a text is anything that human's make meaning from. Therefore, anything we can interpret the meaning of – a

book, television program, piece of furniture, or in this case official documents and hearing transcripts – is treated as a text.

[4] For a thorough discussion of the use and evaluation of conceptual typologies in the social sciences, see Max Weber, *Economy and Society Vol. 1* (University of California Press 1968).

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