

PROMOTING ENVIRONMENTAL EMPOWERMENT: ENVIRONMENTAL JUSTICE
POLICY, PARTICIPATORY PLANNING, AND EMPOWERMENT IN
RESPONSE TO ENVIRONMENTAL THREATS

By

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I dedicate this dissertation to my daughter Tempest Green, whose pure and shining energy casts soulful light on all that I do. I dedicate this dissertation to my wife and best friend Danica Jyoti, whose courageous and unending love elevates me from the darkest mires. I dedicate this dissertation to my friend and mentor Bob Newbrough, whose fire and wisdom will always inspire me to do greater things.

I dedicate this dissertation to the soul of Adrian Von Briesen. May our paths cross beyond the great forest where you lie. I dedicate this dissertation to the soul of Cody Sherr. May our paths cross beyond the chasm we dug together.

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CHAPTER I

Introduction

We live in an era where environmental dilemmas ram headlong into social justice. Daily realities increasingly force us to see the connections between environmental issues (e.g., pollution, climate change, energy crises, response to natural disasters, and urban planning) and resultant imbalances in benefits and burdens. Humans have modified and transformed the Earth in countless ways, often with destructive effects (Moos, 1976). Since the 1970s, environmental issues have become more visible in mainstream society – partially due to the global nature of environmental concerns like ozone depletion and global climate change (Miller, 2006). Decisions made about environmental hazards have resulted in disproportionate burdens on people of color (Bullard, Mohai, Saha, & Wright, 2007). Additionally, hazardous waste sites are much more likely to be placed in communities of color that are already living in poverty and suffering from other social vulnerabilities (Ringquist & Clark, 1999). Although recent efforts to increase awareness of environmental issues have been successful, environmental justice (EJ) advocates claim that there are still persistent environmental injustices that have not gotten the attention afforded more mainstream issues (Taylor, 2000).

The process of having a say in environmental decisions goes beyond their material effects. Community participation leads to empowerment, a process wherein people gain control over their lives and the processes of governance and decision-making (Zimmerman & Rappaport, 1988). This is both a psychological and instrumental process

that is necessary for citizen control toward social justice. Rich, Edelstein, Hallman, and Wandersman (1995) model the process of empowerment as a reaction to environmental threats faced by communities. As the empowerment tradition in community psychology (CP) is rooted in procedural justice (Fondacaro & Weinberg, 2002), processes of empowerment in reaction to environmental issues fit well into concepts of EJ. Thus, adapting the model created by Rich et al., I propose the concept of *environmental empowerment* (EE) to describe the processes by which individuals and collectives gain voice and control in the face of environmental threats. This connection between EE and EJ is important because it links a strong tradition of empirical and theoretical work on empowerment in CP with the necessary *process* element of EJ that – according to critiques (Talih & Fricker, 2002; Weinberg, 1998) – is often lacking in empirical literature. The process of EE will be articulated and supported throughout this work and used as a framework for presenting its results.

The lack of resources and increased imbalance in burdens from environmental threats in the U.S. southwest marks the region as an important venue for examining EE and EJ. Tribal lands in the Southwest are some of the nation's leaders in poverty and diminished access to amenities (Webster & Bishaw, 2007) while the U.S. Southwest has been a focal point for tribal experiences of environmental injustice (Kuletz, 1998). Recent policy changes may reshape the future landscape of tribal interactions with state governments. Following the Clinton administration's Environmental Justice Executive Order in 1994, New Mexico became the sixth state to enact a policy based on EJ principles (Richardson, 2005). The EJ Executive Order signed by Governor Richardson (2005) set out guidelines for future environmental regulations to ensure that communities

are protected from undue burden of environmental use and abuse.

To take advantage of this opportunity, I worked with the Environmental Justice Liaison for the New Mexico Environment Department (NMED) and the American Indian Law Center (AILC) to create participatory workshops on environmental permitting.

These workshops aimed to disseminate details about changes in environmental permit granting regulations and foster the use of these regulations to protect community health and well-being. These workshops have encouraged tribal leaders and environmental employees to take an active role in environmental permit processes that will affect their communities. As an evaluator of the workshops, I was granted access to multiple data sources to pursue questions surrounding EE and in what ways the EJ order might result in EE. This dissertation answers one main overarching research question and three resultant secondary research questions (All technical terms are defined in depth later in this paper).

The core question is: In what ways does the NM EJ executive order result in environmental empowerment and shed light on its mechanisms? The resultant secondary research questions are:

1. In what ways is the core stakeholder organization subject to isomorphism? How does the core stakeholder organization maintain legitimacy? How does isomorphism within this context constrain or facilitate the organization's role in promoting environmental empowerment?
2. In what ways do EJ provisions within the NMED create capacity for formal, intrapersonal, instrumental, and substantive environmental empowerment? Specifically, in what ways do formal, intrapersonal, instrumental, and substantive environmental empowerment result from:

- a) The EJ Liaisons (both the structural position/role and the functional performance of personnel within the position/role)?
 - b) The permitting workshops?
 - c) The NMED Solid Waste Bureau's EJ provisions?
3. The third resultant research question is: In what ways do the elements of substantive empowerment/tangible results resulting from the NM EJ executive order create a cycle of environmental empowerment?

The main methods that I use to answer these questions are surveys, a focus group, participant observation, follow-up interviews, and archival analysis. The core approaches to data analysis that I use are qualitative coding (hybrid inductive and deductive), geographic information systems (GIS), social network analysis (SNA), and basic quantitative analyses.

I begin this dissertation by outlining the history and elements of the EJ perspective, as it specifically speaks to the intersection of social justice with environmental decision-making. I then review literature on the problem at hand; we are faced with mounting environmental issues and growing disparities in the resultant benefits and burdens. These empirical studies are framed using EJ – as it focuses specifically on these disparities. Then I review the responses to these environmental issues from the EJ movement and CP. Finally, I review literature on spaces for addressing these issues; this includes organizations (grassroots and government) and other spaces for participation. These disparate literatures combine to provide a backdrop for understanding empowerment for people and communities facing environmental threats. The EJ lens aids in seeing environmental issues from a social justice perspective.

EJ has been a change-making perspective across many domains, but the EJ movement remains a primarily value-driven political effort with little empirical research. When one is subjected – or gains exposure – to environmental injustices, it becomes clear why so many people are so passionate about making changes in the way environmental decisions are made. Witnessing the lived experiences of mass birth defects, chronic disease, diminished mental health, and the lack of response to clear patterns of negligence would motivate most people to act. Still, there is a very important role for empirical research to determine the legitimacy of political claims and shape environmental decisions with evidence instead of propaganda. The EJ movement has mostly consisted of advocacy and direct action while producing a literature with significant repetition of themes and authors. Community psychology has much to offer the EJ perspective, including research methodology, critical frameworks, community and change theories, resources, and networks. This dissertation bridges these elements of CP with EJ in a participatory and practical manner toward a greater understanding of empowerment in response to environmental threats.

CHAPTER II

Literature Review

The Perspective: Environmental Justice as Critical Lens for Research and Action

The environmental justice lens. The links between environmental degradation and oppression are evidenced in unjust and uneven access to utilities and amenities, exposure to toxic and radioactive waste, responses to natural disasters, and more. Empirical literature displays disparities in exposure to environmental hazards by race and class that are widespread. The local experiences of these disparities have led to the emergence of the EJ movement – although local movements predate the EJ movement and exist in many nations outside of the United States. Still, the most identifiable and coherent movement of its kind is from the United States and deserves credit for establishing networks, research, and critical understanding of environmental injustices.

History of the environmental justice movement. The U.S. EJ movement began in 1982 in the United States when communities in Warren County, North Carolina began protesting the illegal dumping of toxic compounds along roadways (Agyeman, 2005); the polluted dirt was placed in an insufficiently built landfill surrounded by communities populated predominantly (69%) by people of color. The protests lasted for over 20 years without resolution until the landfill was finally designated a Superfund site by the EPA (North Carolina Department of Environmental and Natural Resources, 2004).

EJ literature often contrasts Warren County's toxic legacy with the Love Canal disaster in Niagara Falls, New York (see Agyeman, 2005; Bullard, 2005; Sandweiss,

1998; Shrader-Frechette, 2002; Taylor, 2000). According to the United States EPA (2009) the Love Canal neighborhood was built over a waste site containing 21,000 tons of chemical waste that began to enter the water supply after heavy rains. This disaster resulted in birth defects and other health problems, eventually leading to the relocation of residents out of the neighborhood and President Carter's establishment of the Superfund program (US EPA, 2009). According to EJ proponents, the difference in reaction to Love Canal and Warren county can be attributed to class and race differences – although class differences are less pronounced in this comparison (Love Canal was predominantly working class) than in others. Although the media savvy of Lois Gibbs and other factors makes direct comparisons difficult, this disparity in response has had sufficient traction to propel EJ advocates to seek out other instances of environmental injustice. The EJ movement is primarily a values-based political advocacy effort – although it has produced some empirical research (Reviewed in depth later in this paper).

EJ has evolved beyond activism – now encompassing its own research, action, theories, and methods. Through its action, the EJ movement has gained federal recognition, resulting in Clinton's Environmental Justice Executive Order in 1994, which encouraged federal and state environmental agencies to take race and class into account when creating policies and granting permits for potential sources of pollution. Thus far, six states have created similar state-level executive orders with specific provisions for state environmental agencies. Additionally, the United States Environmental Protection Agency (2007) has adopted a definition of EJ as: "...fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies" (p. 1).

In the 1970s, the mainstream environmental movement grew out of the more widespread acceptance of the global dimension of environmental degradation as a real threat to human survival (Miller, 2006). Mainstream environmental groups that emerged then and since have been slow in broadening their member base to include people of color and poor or working-class whites (Camacho, 1998). This lack of diversity may emerge from the different environmental issues faced by marginalized groups when compared to the affluent white people who traditionally populate environmental organizations. Springing from these differences, the EJ movement integrated mainstream environmental concerns (e.g., natural resource conservation) with related issues for people of color and those in poverty (e.g., health, local economy, education, housing, and urban land use) to form a more comprehensive vision of the human environment (Camacho, 1998).

Environmental justice and sustainable development. Although sustainability can be defined in many ways, sustainable development is virtually synonymous with EJ. The term “sustainability” is hotly contested, frequently used in promotional literature for groups as diverse as the US military, the World Bank, the Sierra Club, and myriad grass roots environmental movements (Watts & Peet, 2004). Still, sustainable development sets the framework for linking class and social issues with environmental issues – ideally moving toward free participation in environmental decision-making by all strata of society. The definition of sustainable development set forth by the World Commission on Economic Development in 1987 is development that, “...seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future” (Speth, 2005, p. 141). This definition originally called for development that respects the

environment and human rights – although the term “sustainable development” has been co-opted and now means many things to many people. Toward a better understanding and use of sustainable development, Sen (1999) prescribes an “integrated process of expansion of substantive freedoms” that integrates “economic, social and political considerations” (p. 8), which will shift social mores and, in turn, environmental outcomes. Based on their research and action experiences, Rich et al. (1995) assert that sustainable environmental decisions, “...are *scientifically sound (in the sense of actually removing or mitigating the hazard) and politically durable in that affected individuals will accept them as fair and satisfactory*” (italics in original, pp. 668-669). In order to promote sustainable development, we must accept that environmental degradation is woven into our society's economy, culture, social structures, and everyday life.

Environmental justice, Superfund, and the Environmental Protection Agency (EPA). Whether part of larger societal shifts or to maintain legitimacy, the EPA is increasingly supportive of EJ efforts, participation in environmental decision-making, and the identification of Superfund sites. The EPA has been working to increase civic collaboration and community participation and has increased organizational learning through scholarly studies and re-visioning of its place in environmental governance (Sirianni, 2009). Moving from a techno-scientific to an ecological-scientific frame helped the EPA to establish reputable collaborations with local civic organizations and consequently affect environmental issues more comprehensively. Although these efforts are commendable, the history of the Superfund program and its relationship to environmental injustice is worthy of consideration. Noonan (2008) notes that there is a stronger case for potential discrimination in the handling of potential EPA Superfund sites

than in many of the research presented in EJ advocacy – although still an imperfect measure of discrimination.

As an example, although the EPA found high levels of arsenic, chromium, dioxin, PCBs, and lead in the predominantly poor, black Hyde Park area of Augusta Georgia, they would not provide assistance in cleaning the area or relocating the residents as they stated that it would take repetitive exposure over years that they felt was unlikely (Checker, 2007). The high incidence of related illnesses, continued efforts by residents, and the multiple toxic chemicals only slightly under the EPA's threshold were not taken into account. In addition, the EPA failed to adjust their hazards identification to include cultural differences in consumption and behavior.

Superfund does not always reach its explicit goals. O'Neil (2007) demonstrates that even though Clinton's EJ Executive Order was specifically crafted to increase the Superfund resources for minority and low-income communities, such communities are even less likely to get Superfund resources than they were at the time of the Executive Order in 1994. Counter to Noonan (2008) and O'Neil (2007), Petrie (2006) demonstrated that Superfund sites have been implemented equitably in the southern United States – although communities with greater percentages of racial and ethnic minorities are less likely to participate in Superfund remediation processes. Lower participation in contaminated minority communities is likely due to mistrust of the EPA (Petrie, 2006). These conflicting reports make clear claims of injustice at the hands of the EPA and Superfund difficult to make, but enough evidence of racial and income based disparity in the application of Superfund placement exists to warrant further investigation. Considering the EPA's recent attempts to be more conscious and inclusive of community

needs (Sirianni, 2009), continuing to pursue collaborative models for impact assessment would be an effective starting point.

The Problem: Disparities in Burdens and Benefits from Environmental Decisions

The EJ movement has not produced sufficient empirical research to support its claims (likely due to its primary goal of political advocacy), but numerous research-focused fields have utilized the EJ framing of disparity in exposure to environmental hazards. Researching EJ combines the methodological and political issues of environmental assessment with social science research – creating a highly politicized and problematic field of inquiry with no clear, objective interpretations. As an example, Dunsby (2004) demonstrates that political decisions are made at the technical level of risk assessment, privileging measurement consistency over accuracy, limiting inclusion of risk factors and their interactions, and relying on outdated data. Each study must be reviewed with an eye for agenda and methodology.

Local empirical research and national research reviews and meta-analyses generally demonstrate that significant disparities in burdens and benefits from environmental decisions exist, although questions remain whether there has been intent to create these disparities and how to remedy them. I articulate EJ framed research, evidence of racial and income disparities in environmental hazards, psychosocial impacts of environmental hazards, environmental justice issues in the Southwest, and salient critiques of the EJ movement are articulated in the following section. I begin with national reviews and meta-analyses and then review local research.

National studies of environmental injustice. National studies of disparity in environmental hazards and risks provide the opportunity to track large-scale trends in

exposure to toxic pollution and to create an empirical backdrop for local studies.

Reviewing the growing number of studies on this topic shows issues such as environmental and mathematical model choice, level of analysis, and definitions of EJ. Still, the general picture of national research in the United States reveals existing and growing racial and economic disparities in exposure to toxic and radioactive hazards.

Meta-analyses and reviews of empirical work on EJ show consistent disparities in exposure to environmental hazards by race and class (as separate, significant variables; Downey & Hawkins, 2008). Ringquist and Clark (1999) found that although there are notable exceptions, the vast majority of studies show a clear relationship between toxic pollution sites and race and income. Hird and Reese (1998) demonstrate that on a national level, using counties as units of analysis, environmental quality is unevenly distributed by race – even when controlling for income, urban location, manufacturing activity, different pollutants, multiple pollutants, and when multiple model types are used. Additionally, preexisting high minority and poverty communities are more likely to have existing hazardous waste sites expanded and less likely to have plant reductions (Hird & Reese, 1998).

The landmark 1987 report *Toxic Wastes and Race in the United States*, sponsored by the United Church of Christ Commission for Racial Justice, set the stage for numerous empirical studies on environmental injustices and has been updated twice (For other national studies, also see: Lopez, 2002; Woodruff, Parker, Kyle, & Schoendorf, 2003; Perera, Rauh, Tsai, Kinney, Camann, Barr et al., 2003; Dolinoy & Miranda, 2004; Dilworth-Bart & Moore, 2006). Goldman and Fitton's (1994) update determined that environmental injustice has grown more severe since the 1987 report, with concentrations

of people of color living in proximity to hazardous waste facilities rising from 25 to almost 31 percent and people of color being almost 50% more likely to reside near commercial hazardous waste facilities than whites.

The twentieth anniversary of the landmark 1987 study, using improved methods of spatial correlation, determined that racial disparities in hazardous waste distribution are greater than determined in the previous reports and in much of the EJ empirical literature (Bullard, Mohai, Saha, and Wright, 2007, pp. x-xi):

1. More than nine million people (9,222,000) live in circular host neighborhoods within 3 kilometers of the nation's 413 commercial hazardous waste facilities.
2. More than 5.1 million people of color, including 2.5 million Hispanics or Latinos, 1.8 million African Americans, 616,000 Asians/Pacific Islanders and 62,000 Native Americans live in neighborhoods with one or more commercial hazardous waste facilities.
3. Host neighborhoods of commercial hazardous waste facilities are 56% people of color whereas non-host areas are 30% people of color.
4. Percentages of African Americans, Hispanics/Latinos and Asians/Pacific Islanders in host neighborhoods are 1.7, 2.3 and 1.8 times greater (20% vs. 12%, 27% vs. 12%, and 6.7% vs. 3.6%), respectively.
5. Poverty rates in host neighborhoods are 1.5 times greater than non-host neighborhoods (18% vs. 12%).

Aggregating cumulative risks from multiple sources of pollution over time is an innovation in EJ research. Defur, Evans, Cohen Hubal, Kyle, Morello-Frosch, and Williams (2007) demonstrate that cumulative risk may significantly increase vulnerability to future risk from environmental hazards and that vulnerability effects on wildlife and ecosystems are even less predictable. Additionally, the distribution of environmental hazards is far from static. Cutter and Finch (2008) researched the spatial changes of hazards for counties in the United States from 1960 to 2007 and found that although, on average, communities are less likely to face them, hazards have become more dispersed and some counties are more likely to experience them.

Local studies of environmental injustice. Local, small studies on disparities in environmental hazards and risks may not have the same power as larger studies, but they serve two important purposes: 1) They aid in building partnerships between local communities and researchers. These partnerships provide another tool for communities to leverage change that does not rest purely on advocacy; 2) In aggregate, these local empirical research studies build a larger case that supports the existence of environmental injustice.

One of the most common methodologies for establishing race and class disparities in exposure to environmental hazards is the use of geographic information systems (GIS) to correlate census demographic data with air pollution. A GIS uses data that can be represented geographically to determine spatial relationships. This can be useful for determining differences in exposure of race or class groups to toxins from point-source pollution. Apelberg, Buckley, and White (2005) found that in Maryland, the highest quartile of African American residence census tracts were three times more likely to have high risk air toxic hazards than those in the lowest quartile. Swine operations are increasingly concentrated and pose health risks for nearby communities from air, water, and soil pollution; air pollution from these operations is easiest to track and has led to multiple studies of such operations in North Carolina. Mirabelli, Wing, Marshall, and Wilcosky (2006) found that North Carolina middle schools with less than 63% white students and greater than or equal to 47% receiving subsidized lunches were significantly more likely to be located close to swine feeding operations and experience airborne effluent from these operations. Wing, Horton, Muhammad, Grant, Tajik, and Thu (2008) measured acute effects of exposure from industrial hog operations, finding that residents

affected by the hog operation were more likely to be poor and people of color than people in similar neighborhoods.

Numerous studies show that minorities and people of lower SES live closer to environmental hazards, but few focus on Native Americans. As an exception, Halinka Malcoe, Lynch, Kegler, and Skaggs (2002) studied lead hazard and risk in White and Native American children in former mining areas of Oklahoma; they found strong interactions ($p = 0.005$) between poverty and soil lead and between poverty and lead in dust and soil sources ($p = 0.02$).

Local studies not only provide local, contextualized evidence on environmental injustices but also form building blocks for the larger body of evidence for promoting EJ. These studies show cooperation between local EJ advocates, organizations, and researchers. Local studies also empirically evidence the existence of environmental injustices internationally, display the diversity of EJ issues, and show the potential for local action toward EJ.

Psychological and psychosocial effects of environmental hazards and injustice. Beyond physical health effects, psychological and psychosocial responses to environmental risks and hazards are important factors for research and action. This can take the form of individual or collective framing of environmental issues, the psychological impact of environmental risks and hazards (or, even, the perception of risks or hazards), or the collective psychosocial community response to natural or man-made environmental disasters (among other effects). From community resilience and capacity to perception of risk to psychological harm from toxic hazards, it is vital to understand the psychological elements intertwined with physical harm. Environmental traumas are

unique in that they often have no known stopping point, making affected communities and people feel that their entire life will be afflicted by the trauma (Rich et al., 1995). Baum and Fleming (1993) add that many psychological, psychophysiological, and physical effects take a long time to manifest and should be measured simultaneously, rather than seen as unconnected symptoms. Race and class experiences have a significant impact on perceptions of risk and actual susceptibility to environmental risks (Checker, 2007).

Psychological framing of environmental risks. Individual and collective framing of environmental impacts can be a major factor in community response to environmental hazards. Wandersman and Hallman (1993) assert that perception of risk (concerns about property values, harm to pets and livestock, crop damage, traffic increase, and the public image of their community) and level of outrage vary based on how exotic, unjust, under government control, unnatural, undetectable, associated with major catastrophes, etc., the risk seems. This may have no relationship to actual magnitude of risk but is still a predictable response. People living near hazardous sites are distrustful of government and industry and have distorted perceptions of risks (Wandersman, Hallman, & Berman, 1989; also see Summers & Hine, 1997). According to Greenberg, Lowrie, Burger, Powers, Gochfeld, and Mayer (2007), residents living near former nuclear weapons sites in the United States are predominantly poor and people of color. These people distrust the Department of Energy (DOE), do not feel the DOE is doing a sufficient job of cleaning and maintaining the sites, and do not feel the DOE is effectively communicating hazards to the public (Greenberg, Lowrie, Burger, Powers, Gochfeld, & Mayer, 2007).

There are also racial differences in risk perception and framing of environmental

hazards. Williams and Florez (2002) studied differences in perception of environmental issues between Mexican Americans and Caucasians in Tucson, Arizona, finding that that Mexican Americans perceived higher risks of environmental hazards and higher levels of disparity in environmental hazards than their Caucasian counterparts did. Whittaker, Segura, and Bowler (2005) found that Southern California Latinos/Latinas have become increasingly concerned with local environmental issues, more so than their Black and White counterparts. Even with this increase in local concern, Southern California Latinos/Latinas have do not display increased concern about non-local and more abstract environmental issues (Segura, & Bowler, 2005).

Psychological impact of environmental risks. As with issue framing, there are differences in psychological responses – both direct and indirect – to environmental hazards and risks at multiple ecological levels. Baum and Fleming (1993) showed that toxic accidents have uniquely powerful impacts on stress and psychological well-being – due to the violation of expectations of control and unknown health consequences that may develop over time.

Although sparse, studies on the psychological impact of toxic pollution on tribal populations exist. Newman et al. (2006) shows a significant relationship between PCB presence in the body of Mohawk adolescents and lowered long-term memory, comprehension, and knowledge. Even with the low levels of PCBs in their systems, the chronic and continuing exposure correlates with diminished cognitive functions. In Santiago-Rivera, Skawenio Morse, Haase, McCaffrey, and Tarbell's (2007) study of PCBs in a New York tribal community found that higher levels of psychological distress from the impact of PCB pollution were significantly related to lower quality of life.

Community response. Community structure, resources, and resilience have important effects on people's psychological responses to environmental impacts. Unger, Wandersman, and Hallman (1992) found that greater sense of community and social support significantly correlate with reduced distress in people living near a hazardous waste facility. Such collective networks of support are a form of *resilience*. Resilience refers to the ability of a system, material, organism, etc., to bounce back to homeostasis after stress and community resilience refers to a community's ability to prevent physical or mental health harm to its members or the community's capabilities (Norris, Stevens, Pfefferbaum, Wyche, Pfefferbaum, 2008). To capture this phenomenon, Norris et al. (2008) crafted a definition of community resilience that rests on a community's resources and, "...the dynamic attributes of those resources (robustness, redundancy, rapidity)" (p. 135). This definition suggests a network of resources that can be dynamically deployed. This potentially acts as the best prevention for environmental catastrophes and a secondary defense when faced with human-made environmental hazards.

Environmental Justice in the Southwest. The balance between benefits and burdens from environmental impacts (e.g., from power generation and radioactive waste) has been determined with almost no voice from indigenous communities. The negative effects of American nuclearism fall disproportionately upon the tribes of the Southwest – including Cold War uranium production, uranium processing, and attempts at permanent radioactive waste storage (Kuletz, 1998). McLeod, Switkes, & Hayes, 1983 state that local tribal peoples have had little or no say about mining, waste, and the related dangers and health risks. Tribal peoples often carry a disproportionately large burden of negative consequences and reap few benefits (such as jobs, tax revenue, or access to utilities) from

mining and milling operations (McLeod, Switkes, & Hayes, 1983). Tribal lands in the Southwest are some of the nations leaders in poverty and diminished access to utilities and other amenities (Webster & Bishaw, 2007) and constantly face water pollution, solid waste, and air pollution within a confusing patchwork of regulatory frameworks, policies, and competing commercial and community interests.

Tribes and government agencies do not always see eye to eye on the assessment of environmental risks and hazards. Arquette, Cole, Cook, LaFrance, Peters, Ransom et al. (2002) observed that tribal communities assess risk differently than government regulators, focusing on the most vulnerable rather than average exposures. Additionally, government risk assessment routinely omits cultural and religious significance, leaving tribal communities with the financial and legal burden of additional assessment measures. In addition to assessment, recommendations are often culturally insensitive; Arquette et al. (2002) note that certain suggested behaviors directed by toxicologists and others, such as ceasing to eat local fish from rivers and lakes, may result in adverse health effects from diets high in fat and calories with few vitamins and nutrients. Higher rates of cancer, stroke, heart disease, type II diabetes, high blood pressure, and obesity – although linked to such changes in diet – are not part of risk assessments. Diminished use of traditional medicines, ceremonial water sources, and similar cultural resources have real impacts on communities that should be included in assessments of toxic impacts.

Due to scarce resources (natural and monetary) and a complex history of colonization, conquest, and migration, New Mexico has a shifting political, social, and economic environment. Wallerstein's (1999) participatory evaluation of the Healthier Communities initiative in New Mexico exemplifies this unstable and competitive

environment. From year to year, responsibility, authority, and funding, would change hands – creating turf wars, changes in goals, complete reversals of perspective (e.g., from community-based prevention to youth incarceration), and general disillusionment for workers and organizations. Between the unstable political landscape of the Southwest, its history of injustices, and government agencies that tend to be slow to change, experiences of environmental injustice in the Southwest are difficult to understand or change.

History of tribal environmental injustices in the Southwest. During the Reagan administration, huge cuts to programs benefiting tribes and stricter standards on economic benefits devastated many tribes. Simultaneously, a large push to store nuclear waste on tribal lands was under way – including “grants” to encourage initial testing phases (Hanson, 2001). Although much of these efforts met with resistance and creative utilization of the tests (e.g., utilizing the testing resources for community improvement), some tribes, like the Mescalero Apache Nation in New Mexico, chose to house nuclear waste. In response, U.S. Senator Bingaman of New Mexico led a congressional fight to stop the waste siting program (after also leading the move in congress for the Radiation Compensation Exposure Act to compensate affected uranium miners) and further efforts to establish shorter term waste sites (Hanson, 2001). Still, New Mexico tribes have born a large burden from nuclearism in the U.S.

Johnston (2007) adds that communities affected by nuclearism are generally constrained in their capacity to, “...understand, confront, and address environmental health problems...” (p. 2) by their relative status within social power structures. Wherever they reside – on or off reservations – Native Americans are socioeconomically below national averages on most measures, including household income and percentage of

families in poverty (Marger, 2005); these conditions are compounded on reservations and land grants that are often resource-deprived – all affecting their power and status, and, therefore, their ability to understand and confront environmental issues.

Johnston, Dawson, and Madsen (2007) relay the history of uranium mining in and around the Navajo Nation in the Southwest: The Navajo Nation and its people were routinely, institutionally, and knowingly exploited and exposed to dangerous health hazards throughout the majority of the Cold War. Navajo miners were given no medical assistance, no mechanical or passive ventilation in mineshafts, significantly lower pay compared to whites, and essentially no information on the risks of uranium mining. Long after multiple empirical studies showing significant health effects of uranium and radon, Navajo workers were kept ignorant and routinely drank water from the mines, ate food in contaminated areas, and wore contaminated clothing back to their homes. Following numerous health problems of uranium miners, a study in the vein of the Tuskegee experiment was performed on miners without alerting them to the continued risk of exposure to radioactivity. Additionally, uranium tailings – the radioactive rubble left over from the ore milling process – were piled in giant mounds less than sixty feet from a river that provided the only source of surface water for the 15,000 residents of the Shiprock area, within a mile of schools, a day care center, farmland, and the Shiprock business district. Additionally, a mill tailings dam broke in 1979, releasing over 93 million gallons of radioactive water and about 1,000 tons of radioactive sediment into a river adjacent to the Navajo Nation and other tribal lands.

Masco's (2006) extensive ethnographic work on nuclearism in New Mexico revealed effects on communities that are widespread and deep, subtle and forceful,

acknowledged and covert. Masco's (2006) approach to nuclear history – including its effects on tribal communities – focused substantially on the felt consequences of nuclear testing, development, resource acquisition and processing on the physical bodies of affected people and the still unfolding ramifications on local ecologies. The entire uranium fuel cycle – from mining to nuclear testing – took place in New Mexico, leaving cumulative physical, psychological, social, and ecological marks on people living there:

For while we all still live in a world quite capable of nuclear war, the cumulative effects of the nuclear complex are already both more subtle and more ever-present than (post) Cold War culture has allowed, affecting some lives more than others, and impacting local ecologies and cultural cosmologies in ways that we have yet to recognize fully (p. 4)...[f]or the entire production cycle for a nuclear weapon – from uranium mining, to plutonium production, to weapons testing, to nuclear waste storage – produces human and environmental costs that are borne by particular bodies in particular places. The social contexts informing nuclear projects therefore necessarily evoke questions about historical presence and identity, often of race and rights, always of citizenship and sacrifice. How individuals engage the nuclear complex puts them in a tactile experience not only with the technology of the bomb but also with the nation-state that controls it, making the interrelationship between the human body and nuclear technologies a powerful site of intersection in which to explore questions of national belonging, justice, and everyday life. (p.12)

Masco's (2006) analysis shows a strong connection between the nuclear industry and those bodies that have and continue to intersect with it – as well as how differing levels of contact with radioactive processes has a profound effect on acceptance and interpretation of associated risks. This is especially important for the tribal communities in the U.S. Southwest that have experienced significant and repeated effects of American nuclearism, such as diminished health, property values, and resources.

Tribal uneasiness with outsiders has likely developed through struggles with policies, governments, corporations, and others that have made decisions (even well intentioned ones) with negative consequences for tribal communities. Marger (2005)

notes that tribal distrust of policy is extremely well founded, as most dispossession of indigenous land holdings in North America was accomplished through government policy while tribes were simultaneously reduced in number and wellbeing through such acts as forced migration, armed conflict, and disease by European-American settlers supported by their government. Policy makers have continued to neglect the interests of indigenous populations in North America (Marger, 2005).

Exemplifying a cause of this mistrust, Berry (1998) highlights the well-known tensions between Native Americans and the surrounding, predominantly Euro-American, people in relation to water; government and corporate interests have almost exclusively set the dialogue on water in terms of legal, economic, and political factors affecting water rights and use. The Native American perspective includes all of these factors but believes that they do not account for cultural and religious aspects of water and that the existing frameworks for determining water use put non-tribal stakeholders at a distinct disadvantage. This has led to lack of sufficient quality water to perform important cultural functions, alongside severe shortages of water for daily use, such as drinking, cooking, and livestock. Many tribal communities also face the practice of *transboundary* solid waste dumping, wherein waste is moved across national boundaries – generally from wealthier and more developed to poorer and less developed nations; this movement of waste is part of a larger increase in the dumping of garbage across racial and class boundaries (Pellow, 2007). Illegal and insufficiently lined solid waste dumping affects water quality, as surface water and ground water interact with garbage and illegally dumped hazardous waste.

Although tribal environmental history does not represent a utopian vision of premeditated responsibility – including hunting species to near-extinction, slash and burn agriculture, and urban pollution that rivaled Europe – there are numerous examples of tribal philosophy, religiosity, and behavior that have solid elements of environmental stewardship. Lee (2009) asserts that a strong eco-philosophy is integral to the tribal world-view and inseparable from tribal behavior and well-being. Arquette et al. (2002), based on significant literature, assert that concepts of, “...respect, caring, appreciation, duty, purpose, and responsibility...” are core to Native peoples' relationship to the environment, rather than power and status. Kinsley (1995) describes multiple empirical examples of this relationship, although counterexamples exist as well. Although not universal, indigenous eco-philosophy does seem to exist for certain tribes and regions.

Fisher (2009) relays the process by which the NMED Solid Waste Bureau operationalized the EJ Executive Order into its code. Rhino Environmental Services proposed an expansion of an existing solid waste facility near the Chaparral Colonia in southern New Mexico. This community was already in proximity to multiple regulated facilities that reduced quality of life for residents on several fronts. In cooperation with the residents of Chaparral, two legal advocacy groups contested the permit in court on the grounds that although technically sound, the expansion would have social justice implications and that these effects were in violation of the stated mission of the Solid Waste Bureau. After appealing the case, the state Supreme Court surprisingly ruled in favor of the plaintiff. The court forced the NMED to include non-expert testimony on the social justice implications of the proposed operation. This led to a temporary injunction for the permit and the writing of specific EJ provisions in the NMED Solid Waste codes.

Recent developments in Tribal environmental justice in New Mexico. Arquette et al., 2002 relay that Native American Nations are increasingly concerned about the effects on human and environmental health of toxic substances. Many are working to determine sources and solutions for pollution adversely affecting tribal communities while working to make sure environmental standards are met by polluters (Arquette et al., 2002). This increasing concern may work together with new government policies to increase tribal EJ by matching motivation with opportunities for action.

New Mexico Governor Richardson's (2005) Executive Order for state-level departments in New Mexico directs all cabinets, boards, and commissions that make or influence decisions that may impact environmental and public health to provide meaningful opportunities for all people regardless of their, "...race, color, ethnicity, religion, income, or education level..." (p. 1) and further directs them to address existing and future disparities in environmental decision-making based on these demographic markers. The Executive Order has potential relevance for indigenous communities in New Mexico and has led to statewide listening sessions to establish collaborations and common goals to pursue EJ. In these listening sessions, the public stressed the participatory, community-based solutions needed to make valid and just government decisions (Alliance for Transportation Research Institute [ATRI], 2004).

These collaboratively established goals and parameters for communication set the stage for partnerships between stakeholders in tribal communities with governments and non-tribal communities. Executive orders and listening sessions will not erase perceptions of environmental injustice, but they may provide opportunities for collaborative solutions to environmental problems. These opportunities might start to

heal the deep environmental, cultural, and relational rifts in New Mexico and the rest of the Southwest.

Critiques of environmental justice research. It is important to understand the weaknesses of EJ research to identify gaps to fill in the literature and means of improving individual research studies. Research on EJ, especially research associated with the EJ movement, often has methodological issues and lacks objectivity in interpretation of results. First, EJ research is almost completely cross-sectional in method (Talih & Fricker, 2002), which is a major weakness in establishing evidence of discrimination. Weinberg (1998) also rightly claims that if we want to understand processes leading to disproportionate environmental hazards, we should study processes, not outcomes. Merely studying outcomes and then making statements of unjust processes lacks necessary evidence and waters down the explanatory power of EJ research and advocacy. Noonan (2008) further invites EJ proponents to be clear about whether it is important to determine actual discriminatory intent or if it is acceptable to act on inequality regardless of the cause or intent. In addition, definitions of what is just or unjust must be determined long before research and action takes place. Weinberg (1998) postulates that many companies pollute because they are allowed to do so, not out of discrimination. Therefore, correlations between environmental hazards and minorities may have more to do with corporate choice rather than differential enforcement. These shortcomings of EJ research make it clear that it is important to determine what evidence is necessary to make the case that EJ is important and politically relevant, then methodologies should be developed to investigate core claims of injustice and racism to determine their validity.

In his review of empirical EJ literature, Noonan (2008) shows that the majority of

empirical EJ research is not only cross-sectional, but tends to downplay or ignore counterfactual results while implying causal chains that the research methodology does not support. Noonan (2008) also notes that some EJ research draws samples based on the dependent variable and generally displays an awkward mixture of multidisciplinary approaches that lack a complete and cohesive methodology. Altogether, EJ research requires a level of scrutiny to get past overblown advocacy stances and lackluster methodology. Noonan (2008) adds that the reasons for correlations between race or SES and environmental hazards is likely more complicated and less direct than EJ advocates wish to claim; although it is the result of economic disparity that may, in fact, be unjust, it is reasonable (and supported by some evidence) that some minorities seek out housing closer to environmental risks – likely due to economic factors, proximity to employment, lack of knowledge about environmental hazards, etc. Almost all evidence in the EJ literature points to unequal distribution of hazard, rather than actual evidence of discriminatory acts (Noonan, 2008).

Broadly speaking, the EJ movement has issues that require improvement. Bowen and Wells (2002) generally criticize the EJ movement on three main counts: a) weak empirical work; b) ignored or unknown distinction between proximity to environmental hazards and the actual risk from exposure to hazards; c) reliance on fear-based rhetoric over actual public health. These weaknesses may stem from a lack of connections and resources to commission or conduct quality empirical work or the belief that advocacy alone is sufficiently politically expedient.

A growing number of EJ studies rely on GIS tools to make spatial connections between environmental hazards and demographic markers. Maantay (2002) critiques

studies using GIS to map instances of environmental injustice, noting that although GIS is a useful tool for determining spatial relationships between pollution and neighborhood demographics, there are multiple issues that are often overlooked. Some of these issues are that the links between sources of pollution and actual risk for communities are rarely made, comprehensive databases of hazards and their magnitude are rarely available, realistic indices of exposure are often unavailable, and application of zoning and planning decisions to determine discriminatory intent are absent (Maantay, 2002).

Environmental racism. Environmental racism is the intentional creation of racial disparities in exposure to environmental risks or hazards and/or access to benefits from environmental decisions (Bullard, 2004). Although support for claims of environmental racism are few and not well supported, the environmental injustices of South Phoenix, Arizona (see Bolin, Grineski, & Collins, 2005; Grineski, Bolin, & Boone, 2007; and Sicotte, 2008) – intertwined with well documented racial justice issues – have prompted researchers to pursue evidence of environmental injustice and racism in South Phoenix. Using spatial, historical, and census-based analyses of significant air, water, and soil pollution from residential and industrial sources, researchers in South Phoenix have made a case for the existence of environmental racism and, certainly, environmental racial disparity in exposure to harm. Considering the growing number of research studies that have found environmental injustice but not environmental racism, the existence of environmental racism is far from being empirically supported.

The core message emerging from reviewing EJ research is that more empirical work is needed. There is empirical support for environmental injustice but a lack of empirical support for environmental racism. In addition, methodological and scalar issues

are prevalent in EJ framed research. There is also relatively little research on solutions to disparities when compared to studies establishing the existence of disparities. This leaves multiple opportunities for more applied research to understand the nature of environmental disparities and more action research to rectify these issues.

The response: EJ and CP reactions to environmental threats

EJ reactions to environmental threats. The EJ movement has had notable successes in preventing and ameliorating environmental injustice. These successful actions – linked with the need for further research on EJ – make action research a logical step for future EJ research. Further, Bowen and Wells (2002) observe that there is a reliance in the EJ movement on fear-based rhetoric in political and community leveraging – although effective collaborations and popular education efforts have also emerged as core methods. This tension in methods shows a need for change and a movement toward more positive tactics that would fit well with an action research methodology. The following are examples of varying EJ efforts from across the United States that display successes of such positive tactics.

Kegler, Malcoe, and Fedirko (2010) documented community-based education efforts to prevent lead poisoning in a former mining region adjacent to a superfund site. The intervention involved engaging elders and youth in tribal and non-tribal communities to reduce risk behaviors for lead poisoning and, consequently, levels of lead in blood. Although other simultaneous efforts make it difficult to attribute change to the participatory education project, risk behaviors and venous lead levels decreased in tribal communities.

Loh and Sugarman-Brozan (2002) documented the efforts of ACE, an EJ organization in Boston, Massachusetts that worked with youth in low-income, minority schools to determine environmental risks. As about one-third of students had asthma, it became the focus of the school program. Students in the program worked to determine hazards in their neighborhoods and determined that some of the busiest areas for public buses – especially for stationary, idling buses – were in their area. The idling diesel buses were contributing to massive air pollution, potentially aggravating asthma symptoms, and violating an anti-idling law in Boston. Students and ACE worked together to put community pressure on the Massachusetts Bay Transportation Authority to remind drivers of the law, followed by a larger effort to convert the buses from diesel to compressed natural gas.

Beamish and Luebbers (2009) described a successful cross-movement coalition launched by EJ groups, peace groups, and anti-weapons proliferation groups to stop a biodefense laboratory. This coalition was able to achieve its immediate goal of stopping a laboratory from being built in a predominantly low-income black neighborhood while building a longer-term coalition among an unlikely mixture of ideologies, classes, and races. This success came from all groups supporting a single, community determined cause and by a division of labor that allowed the different groups to use their strengths to pursue complementary goals.

Čapek (1993) documents a case wherein residents of a community next to a Superfund site were able to use the EJ frame to secure funds to buy out and relocate housing. Although EJ research has some methodological issues, it still has utility as a political tool for justice. This may create ambivalence for EJ researchers who prize

effective tools for justice but still feel that empirical evidence is the best tool for this achievement.

Environmental injustice is not always as simple as a case of corporations or governments polluting without regard for existing vulnerabilities. Macias (2008) documents an alleged case of environmental racism that runs counter to most claims to environmental injustice, in that Hispanic residents of northern New Mexico claimed that anti-logging laws were racist and were preventing them from collecting firewood and engaging in subsistence land-use consistent with their cultural heritage. The logging ban championed by the Forest Guardians was intended to protect the Mexican Spotted Owl but failed to allow for small-scale woodcutting – resulting in small businesses and individuals losing the ability to gather wood. The Hispanic community used *frame bridging* (linking unconnected issues that have congruent ideological ends) to link the logging issue with long-festering land grant tensions. This successfully cemented enough people together to stop the ban. This displays the intricacies of ethnic and environmental intersections and the need for moving beyond the traditional – predominantly wealthy and white (Taylor, 2000) – environmental movement to sustainably protect the environment. Noonan (2008) urges EJ researchers and policymakers to look at the full complexity of situations before acting. Aside from missing important cultural and economic factors when making well-intentioned decisions, macro structural factors can make short term successes dissolve over the longer term. As another example, by improving communities facing environmental hazards without addressing economic inequality, well-intentioned researchers or activists might pave the way for gentrification, forcing residents to relocate to similarly hazardous areas (Noonan, 2008).

CP reactions to environmental threats. Community psychologists have conducted research on environmental issues that intersect with social justice and continue to do research and action in this area. Culley and Hughey (2008) uncover the interaction between hazardous waste disposal, power, and participation. Riemer and Reich (2011) introduces a special issue on global climate change for the *American Journal of Community Psychology* and the Environment and Justice interest group within the Society for Community Research and Action was recently formed (Riemer & Voorhees, 2009; also see Edelstein & Wandersman, 1987; Rich et al., 1995, and the 2011 AJCP special issue for more examples). Even with these recent developments, it is worth revisiting Brody's (2000) position that the question should not be, “[w]hy is environment emerging as an important focus for community psychology; but rather: Why is it *still* emerging more than 25 years after the first Earth Day?” (p. 942). Environmental research and action in CP is still in its infancy, lagging behind adherence to ecological methods and theories (Voorhees, 2009).

The relative lack of focus on environmental issues in CP is likely due to its roots in clinical psychology (Levine, Perkins, & Perkins, 2005), which does not focus on environmental issues beyond impacts of disasters on mental health. Focusing on environmental issues may push some community psychologists outside of familiar professional boundaries. This tension is even found in field biology and ecology, where activism and environmental action are not necessarily familiar or welcome (May, 1989). Brody (2000) alerts community psychologists that the ecological “...fates of local and global communities are *our* issues as community psychologists. As professionals, we must become involved” (p. 944, emphasis added).

Potential for action: Community psychology's fit with environmental justice.

Community psychology is an excellent fit with EJ and community psychologists have much to offer EJ, including theories, research methodology, and resources. Community psychology (CP) is concerned with the envired organism – making the understanding of natural and built environments an important part of researching and acting in communities (Newbrough, 1973). Although CP claims an ecological perspective as a central tenet (see Kelly, 1968 & Newbrough, 1973) and the biosphere as an important stratum of inquiry (see Levine, Perkins, & Perkins, 2005), environmental issues are rarely a focus of CP research with a few notable exceptions. The growing need for attention to social justice issues amid expanding environmental issues makes EJ a necessary place for community psychology research and practice. Brody (2000) and Dean and Bush (2007) believe that CP researchers and practitioners can and should help resolve environmental degradation. From community psychology's inception, ecology and environment have been key foci but research has rarely moved beyond the immediate surroundings of individuals and their communities.

Community psychology's focus on poverty prevention and alleviation is another point of intersection with EJ. Environmental disasters disproportionately affect those in poverty (Comaroff & Comaroff, 2001; Prilleltensky, 2003; Sen, 1999) – whose fate is already closely tied to environment conditions (Speth, 2005). Additionally, Rich et al. (1995) note that the staggering number of toxic spills, toxic accidents, and routine toxic releases into the environment can be disempowering for a community. This link to empowerment makes environmental and toxic hazards an important issue for community psychologists.

Brody (2000) believes that CP researchers and practitioners – even more traditional psychologists – can help resolve environmental degradation by showing that it cannot be merely measured in economic expenditure, disease incidence, or species extinction but must also include the affective, behavioral, and cognitive effects on humans, their communities, and their social relationships. These effects of environmental issues can directly lead to learning disabilities, mood disorders, and other common disturbances to human well-being (Brody, 2000).

Community psychology can play a central role in bringing a social justice lens to our collective efforts to expand current thinking on how best to care for people and the environment (Dean & Bush, 2007). In her 1978 presidential address to the APA Division of Community Psychology, Barbara Dohrenwend proposed a conceptual guide for community psychologists that encourages us to focus on person-centered and environment-centered issues simultaneously. A focus on environmental contributions to personal and collective wellbeing is therefore primary to CP and central to the intersection of environmental issues and social justice. As environmental degradation affects communities at an increasing rate, it can be advantageous to work on environmental issues and community capacity building to prevent the creation or exacerbation of community problems. Congruent with Dohrenwend's (1978) call for contextualized primary prevention, we can both acknowledge and work to change environmental factors contributing to community and individual stress while also focusing on structural contributors intersecting with the effects of environmental degradation (e.g., political and economic policies). Levine's (1982) account of the Love Canal Home Owner's Association is an excellent example of the intersection of policy,

economy, and community well-being. The Love Canal disaster is one of the most well known and visible environmental disasters affecting a U.S. Community and the work of the home owners association is an excellent example of the effectiveness of collective efficacy to create a healthier community less burdened by human-caused environmental deterioration.

Multiple core CP theories are a good match with pursuing EJ. Newbrough, McMillan, and Lorion (2008) conceptually place community psychologists in a position to foster social enablers by becoming *friends of the process* – a role easily adapted to environmental threats to communities. Zimmerman and Rappaport (1988) demonstrate that greater levels of community participation results in correspondingly higher levels of empowerment; by increasing involvement of disempowered community members affected by environmental degradation, communities can gain empowerment while working on material issues affecting their well-being.

Empowerment in the face of environmental crises can spring from communities coming together – especially when they have the individual and collective resources to respond effectively to the crisis (Rich et al., 1995). Rich et al. (1995) propose a model for empowerment in response to environmental threats that adapts standard CP elements of empowerment. Their model (see figure 1) follows empowerment from setting (Organizations, institutions, individual and collective characteristics) through process (Citizen mobilization, public participation) to outcomes (substantive success or failure leading to community empowerment or disempowerment).

There are differentiated forms of empowerment within the overall model proposed by Rich et al. These forms allow more specific determination of successes and failures to

achieve community empowerment within a larger process. These forms of empowerment are *formal, intrapersonal, instrumental, and substantive* empowerment. These are adapted into the larger EE model as forms of environmental empowerment. Each of the component forms of environmental empowerment from Rich et al. are described below.

Formal environmental empowerment. Formal environmental empowerment consists of opportunities for meaningful participation and decision making. These opportunities are created by governmental and private institutions coupled with a capacity for participation among community members and organizations. Formal environmental disempowerment can take the form of structures like public meetings that appear to allow citizen voice but do not allow for real citizen power in the decision making process.

Intrapersonal environmental empowerment. Intrapersonal environmental empowerment consists of feelings of personal competence related to the larger process of community empowerment. This may be a result of capacity building by organizations within formal environmental empowerment. It may also be a result of previous participation. Intrapersonal environmental disempowerment can be a lack of self-confidence or an illegitimate sense of efficacy.

Instrumental environmental empowerment. Instrumental environmental empowerment consists of an actual capacity for meaningful participation. This capacity may be skills acquired from previous participation or elsewhere. This is distinguished from intrapersonal environmental empowerment that consists of confidence in one's capacity versus actual capacity. Instrumental environmental disempowerment consists of a lack of skills or capacity to participate in decisions.

Substantive environmental empowerment. Substantive environmental empowerment consists of actual decisions that solve problems and reach desired outcomes (or, at least, desirable outcomes), based on the previous forms of environmental empowerment. These outcomes stem from collaboration between formal organizations, community organizations, and community members (formal environmental empowerment). These outcomes rely on self-confidence and perceived ability (intrapersonal environmental empowerment) along with actual capacity for participation (instrumental environmental empowerment). All of these forms of empowerment must sustainably and tangibly solve environmental problems for a community. If this occurs, community empowerment is a result and the larger cycle of environmental empowerment is complete. Following the model from Rich et al., community empowerment results in further formal, intrapersonal, and instrumental environmental empowerment. Through their original model, Rich et al. (1995) make a significant contribution by connecting one of the most important tenets of CP (empowerment) with environmental issues.

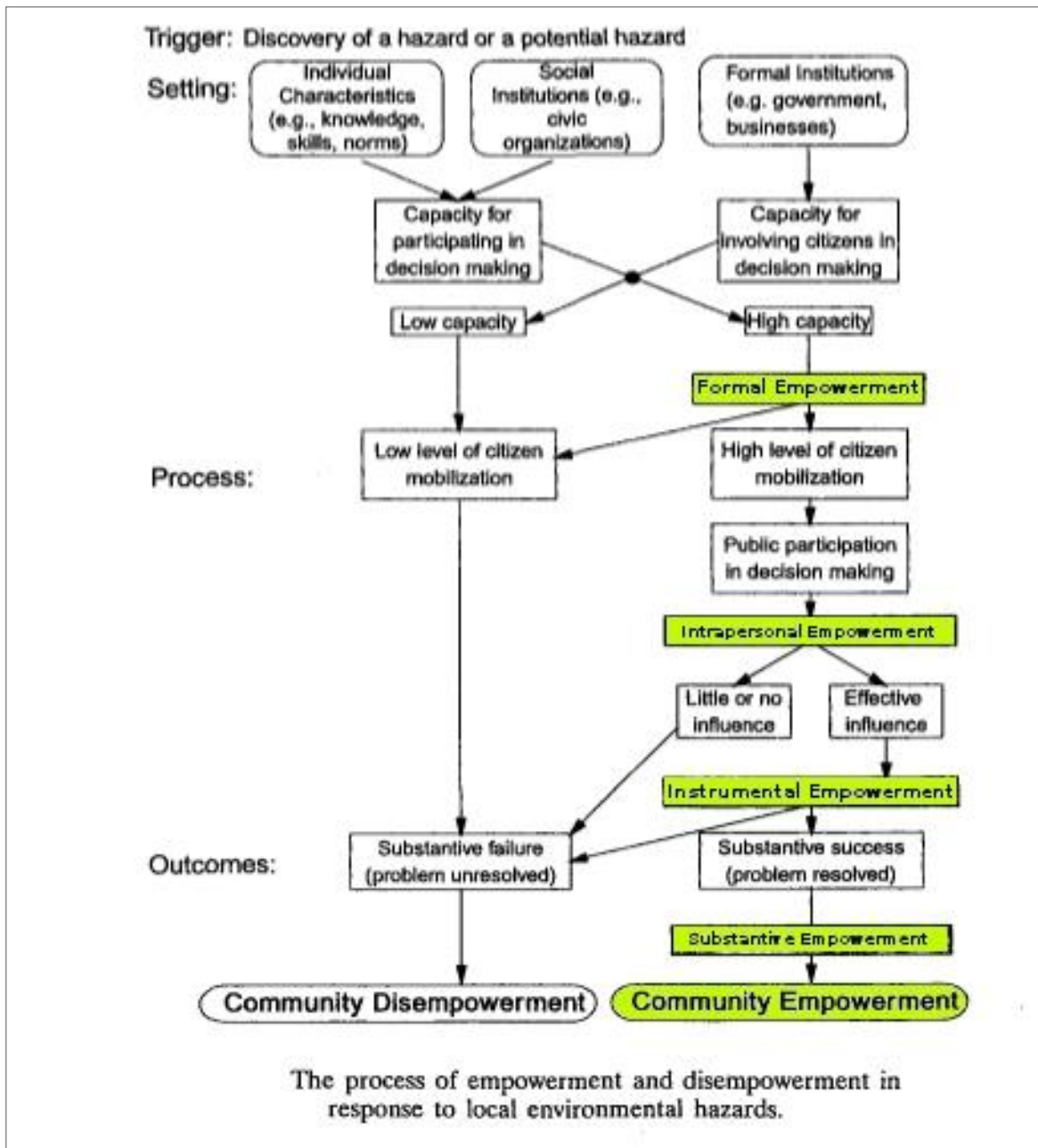


Figure 1: The Process of Empowerment and Disempowerment in Response to Local Environmental Hazards (Rich et al. 1995)

The arenas for change: structures and spaces for pursuit of EE

Social change and movement toward EJ cannot happen without organizations, places, relationships, legal frameworks, financial resources, and more – coupled with opportunities to mobilize these assets toward goals. These features are part of the *space* necessary for change. The multitude of diverse organizations that intersect with EJ and environmental issues are a nexus of the elements of space and a necessary venue for inquiry and action. This section focuses first on organizations and their behavior to understand more fully how they affect environmental action. Then I review the broader literature on space as a venue for participation and change toward EE and EJ, especially its links with formal environmental empowerment.

Organizational Space. Organizations and social structures link individuals to society, forming an important network of power and connectedness. Although environmental issues are sometimes viewed purely at the local level, there are organizations and structures that have complex effects on local environmental decisions. Lewin (1944/1999), one of the architects of action research, asserts that social change occurs through the dialectic relationship between individuals and all levels of society; organizations are the crossroads of these levels. Organizations and their processes – both bureaucratic and market-based – are a necessary point of action and inquiry for understanding the past, present, and future of environmental issues. Whether focusing on more formal organizations like corporations and governments or more grassroots organizations, understanding the links between individuals, communities, organizations, and the greater societal context is important for understanding and promoting EJ and EE. Based on extensive reviews of organizational research, Salamon (2001) states that in civil

society, organizations can play critical roles in both limiting the power of the state and limiting the deficiencies of individualism.

There is no single dominant organizational theory that explains the structures and behaviors of organizations. Although many theories exist, there are two common theoretical frameworks that attempt to explain organizational structure and behavior. The first is Weber's theories on bureaucracy and capitalism and the second is organizational ecology. Weber's position is based on the proliferation of bureaucratization in government and large corporations and how this rigidity is echoed in other organizations that are pursuing similar interests (Swedberg, 2003). The pursuit of interests (broadly defined) proposed by Weber for individuals, organizations, and organizational fields may lend itself to a rational actor theory, wherein actors and collectives rationally pursue their interests and adopt organizational structures to most efficiently do so. Some organizational theorists have pursued this end, creating a caricature of Weber's nuanced theories (Merelman, 1998; Swedberg, 2003). Weber believed that organizations need to have rational/legal legitimacy by following accepted conventions and granting clear channels for participation (or, at least, the appearance of participation) by those they affect (Merelman, 1998). For Weber, civic participation and capitalist competition balance the monolithic rigidity of bureaucracies (Baehr, 2001; Merelman, 1998). In contrast, organizational ecology provides theories on behaviors and structures of organizations based on principles adapted from biology and natural ecology. Although adherents to the two sets of theories tend to emphasize the differences, many elements of Weber's theories are congruent with organizational ecological theory. The main differences between the theoretical frameworks lie in Weber's emphasis on *interests* as

driving forces of organizations (regardless of their efficiency in serving those interests) and their structures versus pressures in an organization's ecology for obtaining legitimacy affecting its structure. DiMaggio and Powell (1983) suggest that historical differences make the ecological perspective more accurate for contemporary organizations.

Meyer and Rowan (1991) explain that modern organizations now form within highly institutionalized contexts; this drives organizations to adopt prevailing procedures, concepts, culture, techniques, policies, etc., in order to appear legitimate and increase the prospect of their survival. They go on to argue that many post-industrial organizations reflect the myths of their institutional contexts instead of the actual goals of their work activities. This runs counter to Weber's vision of successful organizations being based on the critical dimensions of coordination and control of work activities congruent with their goals; this assumption emerges from the belief that organizations generally organize themselves and function according to their initial formal blueprints. A nuanced look at Weber's theory reveals that he understood that competing interests would make such pursuit difficult (Swedberg, 2003). Meyer and Rowan (1991) cite numerous empirical works that dispel a strong connection between goals and structure in more contemporary organizations:

...researchers concluded that there was a great gap between the formal and the informal organization (e.g., Dalton 1959; Downs 1967; Homans 1950). A related observation is that formal organizations are often loosely coupled (March and Olsen 1976; Weick 1976): structural elements are only loosely linked to each other and to activities, rules are often violated, decisions are often unimplemented, or if implemented have uncertain consequences, technologies are of problematic efficiency and evaluation and inspection systems are subverted or rendered so vague as to provide little coordination. (p. 43)

Beyond the operational vagaries cited by Meyer and Rowan (1991), organizational theorists and researchers have borrowed an apt concept from ecology known as

isomorphism – which illuminates processes of homogenization and organizations searching for legitimacy.

Isomorphism is an ecological term describing the tendency for organisms, organizations, and ecological settings to take on similar forms, even though they have different genetic, structural, or trajectory backgrounds (Cherrett, 1989). In organizational ecology, isomorphism refers to organizations adopting prevailing structures even when it does not match their founding ideology. DiMaggio and Powell (1983) describe three types of isomorphism: mimetic, normative, and coercive. Mimetic isomorphism is a response to uncertainty in an organization, wherein organizations model their structure after more established organizations. Normative isomorphism springs from professionalization, wherein the training of new professionals and influences from professional networks lead toward organizational homogeneity. Coercive isomorphism happens when organizations adopt the culture and structure of more powerful and established organizations to gain legitimacy, wherein, “powerful organizations force their immediate relational networks to their structures and relations” (Meyer & Rowan, 1991, p. 49). DiMaggio and Powell (1983) explain that coercive isomorphism results from *formal* (e.g., regulatory frameworks) and *informal* (e.g., “legitimate” cultural practices) pressures by other organizations that an organization is dependent upon and the larger society within which the organization operates. Although DiMaggio and Powell (1983) acknowledge that these three types of isomorphism have some overlap, they still form a taxonomy when empirically observed. DiMaggio and Anheier (1990) add that competition for resources increases organizations' adaptation into niches and, thus, isomorphism.

The concept of isomorphism is important to understanding formal environmental empowerment, which I explore in greater depth later in this paper. In short, formal EE refers to organizational capacities to provide communities with opportunities to become part of environmental decision-making. This capacity – regardless of organizational goals – relies heavily on an organization's structural ability to include community participation in decision making, provide resources for community members, and maintain organizational legitimacy while facilitating community involvement.

The relationship between isomorphism and any form of empowerment has not been explored in significant depth, but several studies shed light on the relationship between them. Fiol, O'Connor, and Aguinis (2001) conclude that isomorphism across individual and group levels reproduces antecedents for power – both as structural opportunities and processes for the production and exercise of power. This ties empowerment to structural and procedural contexts that are reproduced across organizations. Olzak and Ryo (2007) find that diversity of goals in activist organizations leads to more protest activity and note that theories suggest this diversity also leads to greater choice and empowerment among participants. Activist organizations are less formalized than many other organization types, so pursuing diversity may be more of an option. Meyer and Jepperson (2000) find that empowerment (operating as increased agency) leads to more adoption of isomorphism, as individuals and organizations use their freedom of choice to adopt prevailing trends. This isomorphism only leads to further empowerment when management principles emphasizing empowerment (such as Total Quality Management) are trending and, therefore, a bolster to organizational legitimacy (Meyer & Jepperson, 2000). Zbaracki (1998) demonstrates that adoption of

empowerment principles to increase legitimacy quickly fades to symbolic rather than actual practice – even though the original principles have technical value beyond the symbolic. This indicates that even isomorphism toward legitimacy based on empowerment principles fades to symbolic shadows of its original intent.

Since the research literature on isomorphism previously reviewed indicates disparity between organizational goals and behaviors, environmental organizations may not have a capacity for formal EE that matches their stated goals. Communities attempting to interact with such organizations would not receive the opportunities for participation and resources they might expect. Alternatively, some organizations might benefit from isomorphism, as they can model their organization on more successful ones. This might provide greater formal EE as less powerful organizations learn from more powerful ones, providing greater opportunities for community participation in decision-making. This could also result in corporations that previously had little or no capacity for community participation to mimic the relative inclusiveness of environmental organizations. The tendency expressed in the literature is that organizations are more likely to take on behaviors that do not directly support their goals (DiMaggio and Anheier, 1990; DiMaggio & Powell, 1983; Meyer & Rowan, 1991), leading to diminished formal EE. It is still worth noting that the opposite is also true – albeit less likely. Either way, the connection between isomorphism and formal EE is of major importance in understanding community participation in environmental decision-making and has not been explored in research literature.

Saidel (2002) notes a trajectory in organizational research results toward, “greater formalization and professionalism at the expense of initial ideological commitments” (p.

43) – likely bending the actual behavior of advocacy organizations away from their ideological roots. This may be partially due to the trend observed by Wolch's (1990) study of volunteer organizations that showed deep influence by the State – that is now providing more funds in the face of thinning resources. Coupled with DiMaggio and Powell's (1983) review of empirical work showing surprising amounts of movement toward organizational homogeneity and emphasis on legitimacy, there is a significant trend toward isomorphism within and between volunteer, government, and corporate organizations. Adding depth to the framing of isomorphism, Meyer and Rowan (1991) assert that norms and bureaucratic operations are not merely general values that spring from some monolithic purpose, but an interplay of rules and meanings from a variety of institutionalized social structures – an oft-neglected focus in most analyses of bureaucracy. Thus, formal structure takes on the character of myth and ceremony more than a rational and logical manifestation of goals and efficiency. Technical procedures, the selection of personnel, and the processing of data are often taken for granted as efficient and logical standards; Meyer and Rowan (1991) claim that they are actually operationalizations of myth and ceremony used to display responsibility and avoid, “claims of negligence” (p. 45). This can take the form of hiring procedures, paperwork/forms, or pay periods – all of which are taken for granted as accepted ceremony, even though the original reasons for their adoption may be lost to institutional history.

Isomorphism should be approached with the same balance Weber suggests when looking at bureaucracies and capitalism. To some extent, isomorphism allows organizations to adopt best practices, acquire useful technologies, and increase efficiency

through proven organizational structures. Yielding to isomorphism may be a sign of dynamism for organizations that might otherwise adopt dysfunctional structures that prevent them from thriving. Alternatively, too much isomorphism can lead organizations to lose sight of their goals in their efforts to appear legitimate. As DiMaggio and Anheier (1990) note, excessive competition can lead to this scenario. It seems probable that organizations experiencing coercive isomorphism are more likely to adopt prevailing structures and behaviors beyond their usefulness, as they adopted them for reasons other than their logical utility for achieving their organizational mission.

Relevant to this coercive process, Stone (1981) introduces the concept of *precapitulation*, wherein those in positions of less power make decisions in accordance with those with more power before it is demanded. This unsolicited concession results from the fear of high risk and failure that structural power engenders. Together, coercive isomorphism and precapitulation paint a picture of advocacy organizations adopting normative structures and cultures before more “legitimate” organizations ever demand it. This early adoption may also serve as preventative action; by taking on structures and cultural behaviors of more powerful organizations, less powerful organizations may be preventing a collision of procedures and policies that could be more damaging than the adoption of the practices. As grassroots organizations and other smaller institutional structures isomorphically take on the character of larger governmental and corporate bureaucracies, they may become building blocks that larger, more legitimate structures can co-opt.

Another potential negative effect of coercive isomorphism is the domination of resource use by organizations that have adopted structures and goals to gain legitimacy.

This may limit resources for organizations that do not have visible mainstream legitimacy but may be acting closer to their founding goals as advocates for communities experiencing environmental injustice. Such processes further constrain already limited resources for pursuing EJ.

Organizational theorists have sharply critiqued the ecological model and derivative concepts like isomorphism. Klein, Tosi, & Cannella (1999) note that in organizational scholarship, isomorphic models have had the appearance of being overly simplistic – often making connections between scalar levels in a parsimonious but incomplete manner and focusing on only one or two ecological levels. Singh, Tucker, and Meinhard (1991) note that critics of the ecological approach in organizational research state that there is a lack of emphasis on power – especially the coercive power of the state. The issue of legitimacy is somewhat different for neighborhood and grass roots organizations; Chaskin (2003) found that for such organizations, legitimacy as defined by constituents varied significantly based on such factors as resident participation, diversity of involved stakeholders, and action congruent with stated community need. Additionally, they perform diverse and wide-ranging functions with significant overlap; this results in a loosely coupled citywide system that is flexible, contextual, improvisational, and significantly variable in efficiency (Chaskin, 2003). This complexity of purpose, overlap, and determination of legitimacy does not invalidate the concept of isomorphism but does indicate a need to measure and understand the complexity of organizations in their context. DiMaggio and Anheier (1990) admit that ecological theory does not explain all organizational structure and behavior, but that it has more utility than any other set of theories for this purpose. As the ecological perspective is mostly congruent with the

nuances of much of Weber's theory, has a good balance of real-world complexity and parsimony, and is akin to core theories in CP, I have chosen to pursue it as a theoretical lens.

Nonprofit advocacy organizations are most germane to understanding environmental issues and their amelioration. According to Wagner (2000), from the perspective of institutional analysis, nonprofits are integral and dynamic parts of social systems rather than the relatively monolithic and separated bureaucratic sectors described by Weber. Wagner (2000) expands the ambiguous nature of nonprofits by stating that, "...nonprofit organizations should be viewed not as forming an institutional sector but as part of a complex network of organizations linked together in the public sphere" (p. 541). It is important to note that, according to Schlozman and Tierney (1986), 70 percent of organizations with a Washington presence represent business interests; in contrast, less than five percent of organizations with a Washington presence make some claim to representing the disadvantaged. Salamon's (2001) research in the 1980s on nonprofit public-benefit organizations found that only about three percent were primarily doing advocacy work for disadvantaged groups or on related political issues. Salamon points out that a significant number of sociologists and historians posit that the limited advocacy, as evidenced in Salamon's research, is partially due to the professionalization of social services and the rise of primacy of the medical and welfare models over an advocacy model.

Spaces for Change. Space is a contextually bound opportunity structure that generally requires initiation and maintenance for it to foster positive social change. Expanding on a common analogy, spaces for change not only take into account a *place at*

the table for stakeholders but the table itself and its location, places at the table, and whether stakeholders feel welcome at the table (among other concerns). The theoretical concept of space is useful for understanding many of the more amorphous elements of how power is generated and exerted in environmental decision-making.

In his landmark work, *The Production of Space* (1992), Lefebvre synthesized and rewrote theory on space. He begins by noting that Kant first removed *space* from the purely empirical sphere, leading to now accepted links among mental space, social space, and the physical space in which mental space concepts are tested and communicated. Lefebvre (1992) asserts that physical, mental, and social space are not neutral; they are bound up in modes of production that are likely in conflict with human and community development (e.g., rampant capitalism). Space is a proxy for power because it is the sphere where power is contested and established, while reflecting the dynamism of the active exertion of power. It is the realm of potential for change in any direction. Empirical work on coercive isomorphism (DiMaggio and Powell, 1983) – although not homogeneous – supports this conception of *space* as an arena for power struggles and dominance of production. Bookchin (1986) describes the frameworks or organized structures for these spaces as the *forms of freedom*. These forms – although necessary for promoting liberatory participation – are essentially neutral and can contain empowering or oppressive content. Attending to both the forms and the content is the only way to assure liberatory spaces (Bookchin, 1986).

The manipulation and domination of spaces for environmental decisions have significant effects on opportunities for pursuing justice and well-being. Bartley (2007) shows that beyond traditional isomorphic forces, entrepreneurial environmental

foundations have created entire fields of moderate, market-based organizations to edge out more radical organizations and movements – thus finding novel methods to create and destroy spaces for environmental action. Auyero and Swistun (2008) document the creation of toxic uncertainty, wherein powerful forces outside of local communities create ambiguity and confusion over facts of toxicity: in a highly polluted area of Argentina, government officials tried to shift responsibility to others, polluting corporations leveraged the media to deny wrongdoing, and misguided politicians haphazardly created and suspended interventions. All of these contradictory messages resulted in confusion among community members about toxicity and pollution levels, thus purposefully reifying toxic uncertainty.

In another case of manufactured uncertainty, Cable, Shriver, and Mix (2008) conducted a long-term ethnography surrounding the Oak Ridge Nuclear Reservation and found that the government, contract corporations, management, and staff physicians contested claims and continued to support an atmosphere of ambiguity in public discourse, even in the face of conclusive evidence proving major illnesses and death from exposure to toxic and radioactive substances. Most documented cases of employee illness were contested due to professional and organizational norms, profit, fear of punitive repercussions, and adherence to nuclearism and national security discourses. Cable, Shriver, and Mix (2008) also note that people suffering from illnesses stemming from toxic or radioactive environments often face similar or identical barriers and their illness is contested by the businesses and government entities that created the toxic or radioactive environment.

By using space and environment as a legal tool to criminalize and marginalize vulnerable people, governments are using their domination of space in a manner that standardizes injustice. Mitchell (1997) posits the phenomenon of *the annihilation of space by law* by reviewing laws and research on homelessness. He asserts that freedom requires the *space* to act, not merely the *right* to act. By creating laws that criminalize the acts necessary for people to survive (specifically, people experiencing homelessness), essentially making homes a necessary prerequisite for legal and free living, many cities are legally removing – or annihilating – the space for people's existence. This phenomenon makes homelessness an even more obvious case of environmental injustice.

Taylor's (2009) research on grassroots contestation in Appalachia shows how varying interests from government, corporations, communities, etc. create a fractured space for discourse on environmental issues; Taylor (2009) shows that communities that organize around common interests in stewardship can cement this fractured space and can lead toward democratic action toward environmental responsibility if grounded in democratic public space.

Harvey (1997) asserts that decisions about space, place, and environment are central to practices of control and domination and essential to trace in any struggle for liberation. Lefebvre (1992) additionally asserts that the State acts as a self-proclaimed stable center of space and its production; this provokes opposition and a back and forth cycle of subversion with both always remaining in some form. Supporting Harvey's (1997) position, Rich et al. (1995) note that most structural opportunities for citizen participation in environmental decisions are adversarial in nature and do not easily allow for finding common interests between citizens, governments, and corporations – while

simultaneously requiring legal and technical assistance that may price communities out of the process. Thus, they suggest a partnership model to prevent and ameliorate environmental crises: By assembling committees and partnerships representing citizen, corporate, government, etc. stakeholders, purely adversarial relationships can be avoided and more realistic solutions can be pursued (Rich et al., 1995). If the EPA, organizations, corporations, and citizens can meet in the middle using collaborative models, all interests might be better served through compromise instead of only the most powerful interests.

Harvey (1997) advocates the *systematic generalization* of local struggles to higher scalar ambitions, establishing connections between local environmental conflicts and the government and corporate historicities that set the stage for such conflicts. This call to action matches continuing work in the EJ movement – albeit with a more theory-driven base. Both Lefebvre (1992) and Harvey (1997) assert that the state and associated organizations have dominance over the spaces where environmental struggle happens and that these spaces cannot be seen as neutral, democratic fields of debate. Harvey (1997) also asserts that the locus of agency for social change is *everywhere*; “Everyone who lives, acts, and talks is implicated” (p. 106). As unhelpful as this may seem at first, it is also liberating to see organizations as territories of space that may resist, but also contain, the potential for change.

Background to this Project

The path from initial conception of this project to the current reality of organizational and community needs has been a long and winding road. My attachment to New Mexico's land and people drew me back for my dissertation. This research represents a combination of needs, existing opportunities, and my own effort to create a

space for EJ through community empowerment.

Community-based research is never easy. Engaging with multiple sectors that have a tense history makes community work even more difficult, especially when navigating between divergent cultures (such as indigenous, bureaucratic, legal, academic, and corporate culture). Arcury, Quandt, and McCauley (2000) found that successful community-engaged research with indigenous groups facing environmental issues requires time sufficient to establish trusting relationships. They also found that including multiple stakeholder groups granted a more complete perspective of problems and solutions while engendering trust between groups and the researchers. For me, this has meant several years of relationship building and reconnaissance to determine the direction and logistics of this action research.

This project began as a conversation with a professor at the University of New Mexico. This professor had recently presented his ideas about the mostly unused EJ policies in New Mexico and his plan to implement training sessions on solid waste permits. He wanted to use the solid waste policy as a springboard for increasing community readiness in the face of inevitable increases in uranium production and nuclear waste storage. Due to my interest in community-engaged research in New Mexico and EJ issues, I decided to take on the project. I began by traveling throughout the state doing informal interviews to determine interest, potential collaborators, and sites for training sessions. Through this process of exploration, I learned that the EJ Tribal Liaison for the New Mexico Environment Department (NMED) had been planning similar sessions for all types of environmental permitting. I met with the EJ Liaison and we agreed to collaborate on planning and implementing the workshops. This happened

eventually, but only after several bumps in the road.

After a few months, the EJ Liaison communicated to me that, due to funding shifts, he could not implement the training sessions until sufficient funding surfaced. Soon after this news, he found out that the American Indian Law Center (AILC) at the University of New Mexico had just received a small grant from the U. S. Environmental Protection Agency to address EJ issues in New Mexico. We then met with the AILC to plan and implement the workshops.

I noticed upon observing their interactions with other stakeholders that the AILC has built a reputation for creating and implementing successful workshops for tribal communities (generally focused on legal and policy issues). The technical nature of some aspects of our planned workshops was well suited to the EJ Liaison's contacts in the NMED. The EPA grant also called for process and outcomes evaluations – skills that no one at the AILC or the NMED possessed. I offered my services as an evaluator and an action researcher in exchange for the use of project data in my dissertation. They agreed and the planning phase commenced.

The demands of the project can be broken down into the needs of four stakeholder groups: The tribal communities, the AILC, the NMED, and the researcher. The tribal communities needed training that is relevant, accessible (both spatially and informationally), culturally tailored, and immediate. This led to the design of participatory workshops. By including tribal leaders and workers in the planning, we were able to tailor the training sessions for maximum relevance. We also included presentations by tribal environmental workers that have successfully used the New Mexico EJ policies to shift environmental decisions in their favor. Then, the AILC

scheduled the training sessions with special consideration for the multiple tribal calendars.

The AILC had received an EPA small grant and needed to fulfill the terms of the grant while effectively using the funds to promote EJ. It was also in the best interest of the AILC to uphold their standard of excellence – especially since this reputation can be converted to social capital with local tribes. Therefore, to fulfill the needs of the AILC as stakeholders, we planned presentations that followed the EPA grant guidelines.

The Governor's office directed the NMED to create and implement EJ practices in line with the EJ Executive Order. They also benefit from retaining and establishing positive relationships with their counterparts in tribal environment departments and with tribal leaders and communities. By presenting at the training sessions, NMED can create and maintain collaborative relationships and uphold their EJ directives in a meaningful way.

My main objectives as a researcher were to aid in the fulfillment of the stakeholders' goals, create and implement a rigorous and valid research plan, and gather data that was useful for all stakeholders. Through the negotiations with the AILC, the NMED, and tribal stakeholders, I was able to secure sufficient influence over the project, evaluation, and research methodology to create a rigorous design and pursue the following research questions that would contribute to CP literature.

CHAPTER III

Research Questions

The research questions answered in this dissertation reflect developing themes that emerged from my inductive qualitative research and their impact on existing theory. The research leading to these questions was based on a combination of stakeholder input, grant requirements, and research literature. There is a balance of exploratory research to understand more fully the general processes and evaluative elements meant to assess the effectiveness of the action directly. Together, these fuse inductive exploration and methods with deductive measurement of anticipated outcomes.

This dissertation answers one core overarching research question and three resultant secondary research questions. The primary research question is based on environmental empowerment, which represents the processes by which individuals and collectives gain voice and control in the face of environmental threats. The core question is: In what ways does the NM EJ executive order result in environmental empowerment and shed light on its mechanisms? This question links this research to existing theory on communities facing environmental threats (e.g., Rich et al., 1995) and the concept of EE elucidated in this dissertation as an expansion of Rich et al. (1995) and existing theory on empowerment. The resultant secondary research questions follow.

Research Question 1

The first resultant research question is: In what ways is the core stakeholder organization subject to isomorphism? How does the core stakeholder organization maintain legitimacy? How does isomorphism within this context constrain or facilitate the organization's role in promoting environmental empowerment? This set of questions links organizational and ecological theory to the observed structure and behaviors of the core stakeholder organization in this research. This provides empirical evidence to understand isomorphism more fully in the context of environmental decision-making and provides utility for organizations pursuing EJ as their mission.

Research Question 2

The second resultant research question is: In what ways do EJ provisions within the NMED create capacity for formal, intrapersonal, instrumental, and substantive environmental empowerment? Specifically, in what ways do formal, intrapersonal, instrumental, and substantive environmental empowerment result from: a) The EJ Liaisons (both the structural position/role and the functional performance of personnel within the position/role)? b) The permitting workshops? and c) The NMED Solid Waste Bureau's EJ provisions? These questions link types of empowerment that are the basis for EE to empirically measured processes observed in this research. These questions also act to assess the totality of the EJ executive order and its resultant components (EJ Liaisons, workshops, and provisions).

Research Question 3

The third resultant research question is: In what ways do the elements of substantive empowerment/tangible results resulting from the NM EJ executive order

create a cycle of environmental empowerment? This question is based on Rich et al.'s (1995) assertion that formal, intrapersonal, instrumental, and substantive empowerment feed back into the greater cycle of empowerment.

CHAPTER IV

Methodology

Following are the research framework, procedures, and approaches to data analysis.

Research Framework

This research is part of a community-based participatory action research (CBPAR) project conducted with the AILC and the NMED. Action research is an applied methodology, wherein a social intervention and the research to determine its efficacy are combined to provide direct, contextual feedback for interventionists while gathering evidence relevant to theory (Lewin, 1944/1999). Specifically, participatory action research (PAR) is a type of action research in which participants partially or completely plan and implement the action and measurement elements of the research process instead of trained researchers. This is called CBPAR when the work is being conducted in and for a community. CBPAR efforts range from researchers seeking consultation with community or organizational members to full citizen control with trained researchers as consultants (Arnstein, 1969). The philosophy behind CBPAR promotes empowerment and meaningful participation by participants instead of treating them as passive vessels of research. CBPAR also calls on researchers to step out of their traditional, “objective” role and take on personal responsibility for the use and outcomes of their expertise (Craig & Craig, 1979; Polkinghorne, 1983).

CBPAR methodology was the guiding framework for my approach to research design, implementation, analysis, and dissemination. This means that participants in the

research project are given as much power as possible – including control over research questions relevant to their work, methods of data gathering, the data gathering process, analysis, and dissemination of results. The AILC brought in tribal stakeholders early to increase their voice in the process, their influence over the workshops, and their endorsement of the entire project. The AILC was fully involved in planning, implementing, and collaborating on the entire project and the determination of data gathering. The inclusion of tribal workers as presenters was a major element of participation, as they were fully in control of their content and delivery. Although the AILC and the NMED tribal liaison had input in the creation and dissemination of the surveys and protocols, I solely performed data analyses. CBPAR projects can be seen on a continuum regarding the level of participation and input from the community – which often changes throughout the project. This project was no exception, as is evident in the previous description of methods. In the end, the goal of CBPAR is to maximize participation as often as possible within the confines of resources, time, and ability.

Access to participants and performance sites was granted in exchange for conducting a program evaluation to fulfill requirements by the grantor (US EPA). The EPA grant largely determined the evaluation methods, with sufficient latitude to tailor methods so that they adhered to CBPAR methodology and added useful data for the larger research questions. I created evaluation reports after each workshop and forwarded them to the AILC to use in their grant reports.

The AILC, NMED, and tribal stakeholders collaboratively created much of the workshop design based on previous AILC workshops on other topics. Although this did not include best practices from research literature, the AILC has conducted a significant

number of successful workshops on a variety of legal and policy oriented content areas in the past that have contributed to their positive reputation. All stakeholders shaped the content and structure of the workshop, which, in the end, added to their success.

Setting

This research springs from a community-based participatory action research project that took place in communities across New Mexico from multiple sectors involved with EJ issues, such as government, non-government organizations, university, private sector interests, tribal communities, legal advocacy groups, and community members. This culminated in collaboration with the NMED and the AILC on permitting workshops for tribal peoples across the state. It also led to an evaluation of the implementation of the permitting workshops. This gave me access to the settings and data sources necessary to conduct the research in this dissertation.

One main reason for the workshops was to educate NM tribes on state-level environmental regulations and processes for issuing environmental permits. Any time that an industry, household, or commercial operation seeks to begin or expand a process that may create or spread pollution, they must seek a permit from the presiding government entity with jurisdiction. Most environmental permitting jurisdictions lie with the state. Although tribal land jurisdiction lies either with the particular tribe or with the federal government, complex territorial lines and pollution's lack of respect for them makes knowledge of state-level environmental permit regulations important.

The first three workshops focused on environmental content areas parallel with the three core NMED bureaus (Water Quality, Solid Waste, and Air Quality). The final workshop was a panel presentation at the 2010 Transitions Tribal Leadership Conference

and aimed to increase tribal leaders' knowledge of environmental issues and policy changes. Other purposes included gaining endorsement from tribal leaders for increasing community readiness while increasing the cross-pollination of ideas, strategies, and resources. These workshops had significant input by tribal representatives. Each workshop contained an introduction to EJ, including specific information on EJ issues in New Mexico and for tribes. They also included a presentation by New Mexico tribal representatives on their success with related environmental issues. NMED also presented on the process of issuing environmental permits and on jurisdiction issues. The workshops had multiple opportunities to participate and share local issues, successes, and concerns. Workshops also included site visits, informative presentations by researchers, and panel discussions.

Procedures

This research represents the most theoretically significant elements of the larger CBPAR project. I have employed a mixed-method design including qualitative and quantitative measures, such as surveys/questionnaires, interviews, a focus group, archival analysis, and participant observation. To analyze the data, I conducted inductive and deductive coding of qualitative data, spatial analysis using a geographic information system (GIS), social network analysis (SNA), and basic quantitative analyses.

Table 1 includes the research questions and the methods and data sources that were used to answer each question:

Primary Research Question:		
In what ways does the NM EJ executive order result in environmental empowerment and shed light on its mechanisms?		
#	Secondary Research Questions:	Methods/Data Sources:
1	In what ways is the core stakeholder organization subject to isomorphism? How does the core stakeholder organization maintain legitimacy? How does isomorphism within this context constrain or facilitate the organization's role in promoting environmental empowerment?	Focus group, follow-up interviews, participant observation, and archival analysis.
2	In what ways do EJ provisions within the NMED create capacity for formal, intrapersonal, instrumental, and substantive environmental empowerment? Specifically, in what ways do formal, intrapersonal, instrumental, and substantive environmental empowerment result from: a) The EJ Liaisons (both the structural position/role and the functional performance of personnel within the position/role)? b) The permitting workshops? and c) The NMED Solid Waste Bureau's EJ provisions?	Focus group, follow-up interviews, participant observation, archival analysis, process evaluations, SNA, and GIS.
3	In what ways do the elements of substantive empowerment/tangible results resulting from the NM EJ executive order create a cycle of environmental empowerment? This question is based on Rich et al.'s (1995) assertion that formal, intrapersonal, instrumental, and substantive empowerment feed back into the greater cycle of empowerment.	Focus group, follow-up interviews, and participant observation.

Table 2 displays each method and approaches to data analysis for each.

Table 2: Data Sources and Approaches to Data Analysis	
Methods:	Approach to data analysis:
Surveys/Questionnaires	Summary statistics using Calc, Qualitative coding using GTAMS
Interviews	Qualitative coding using GTAMS, SNA using SocNetV
Focus group	Qualitative coding using GTAMS, SNA using SocNetV
Archival analysis	GIS using ArcGIS, SNA using SocNetV
Participant observation field notes	Qualitative coding using GTAMS, SNA using SocNetV

Following are detailed descriptions of the methods used for data collection and procedures used for data analysis.

Time-1 Survey. I designed a survey to gather data from workshop participants directly after each workshop (see Appendix A for the survey instrument). The survey included input from the AILC and my committee. This quantitative and qualitative survey gathered data on participant satisfaction, process evaluation of the workshop elements, and environmental concerns. Quantitative items specifically focused on relevance of workshop content, transfer of information, motivations for attendance, and intent to use workshop content. Most quantitative items were statements with Likert-type response scales, such as: “I, my organization, or my tribal community is facing an issue right now where this information is useful.” Qualitative items probed for details on workshop implementation, utility, and structure – while providing opportunities for participants to comment on broader environmental issues and environmental permits. The survey contained open-ended questions, such as: “How are you planning to use the information you received in this workshop?” AILC personnel distributed these self-administered questionnaires at the end of each workshop, stripped of personal information, then compiled and analyzed by me. I then created midterm reports based on these evaluations for the AILC to utilize in their grant reports to the US EPA.

The survey sample was drawn from workshop attendees, limited by self-selection of those willing to complete the instrument. Estimating attendance of 25 per workshop and 4 workshops with a 50% to 75% return on questionnaires, I expected 50-75 completed questionnaires. Due to low attendance at workshop 3 because of a snowstorm,

I received 59 survey responses (Workshop 1: $n = 22$, Workshop 2: $n = 20$, Workshop 3: $n = 11$, Workshop 4: $n = 8$, total complete surveys from all workshops: $n = 61$).

Time-2 Survey. Within several months of the workshops, follow-up questionnaires were sent to all workshop participants. Time-2 surveys were mixed qualitative and quantitative questionnaires intended to measure longer-term effects of the workshops (see Appendix B). They were sent to all participants who left contact information at the workshops and focused on direct follow ups to the Time-1 survey with additional qualitative questions on current environmental risks, environmental policies, and EJ. The follow-up survey included multiple-choice questions such as: “with whom have you built relationships with (in addition to existing relationships) to use information from the workshops and/or panels?” It also included open-ended questions such as: “can you briefly describe, in your own words, what environmental justice means?”

Due to insufficient workshop participant survey response ($n = 6$), statistical power for quantitative analysis of the follow-up survey was not adequate. Further investigation revealed two main reasons for the extreme mortality from the Time-1 survey: First, many New Mexico tribal governments elect new leadership every year, which results in a complete turnover of many government officials. As the workshops do not repeat every year, keeping track of participants and relevant administrators is a significant challenge. This means that many of the contact emails based on positional titles (e.g., `envdirector@examplepueblo.gov`) were now reaching people that likely did not attend the workshops. Second, due to major declines in funding, some agencies employing participants were forced to downsize. Between these two factors and common survey

refusal rates, very few Time-2 surveys were completed. Consequently, I coded qualitative elements of the Time-2 surveys and discarded quantitative responses.

Interviews. Interviews were based on a semi-structured protocol (see Appendix C for interview protocol) and measured organizational context, perceived community environmental risks, workshop effectiveness, and more. Interviews were conducted in person and over the phone and were audio recorded, transcribed, and coded using GTAMS analyzer. The interview protocol includes open-ended questions such as: “During the actual workshop, do you feel that you had the opportunity to have your voice heard?” And “What environmental risks do you and your community face right now?”

I drew a purposive sample from NMED workers, AILC workers, tribal and environmental workers, and tribal leaders, starting with individuals that attended planning sessions, presented information, and contributed to the administration of the workshops ($n = 9$ for initial sample). Participants who had taken part in the planning and implementation of the workshops were both important for the research and more amenable to being interviewed. I then used snowball sampling to identify more interviewees through referral from previous participants ($n = 15$ for second round snowball, $n = 24$, total). Interview participants were offered \$25 as compensation for their time.

Focus group. After the final workshop, I conducted a focus group with AILC workers and the original tribal representatives who aided in planning the trainings ($n = 9$). The focus group was chosen as a method by the AILC, who wanted to get the core stakeholders together to critique the workshops. I facilitated the focus group with core stakeholders, pursuing in-depth questions about environmental issues, risk, response, and

the use of participatory workshops for promoting EJ. The focus group protocol (see Appendix C for focus group protocol) included open ended questions such as: “How did the process of planning and participating in these workshops change your perception of environmental policy in New Mexico?” Variants of the interview protocol questions were used in the focus group to make direct comparisons between interview data and focus group data. Additional field notes on group dynamics were gathered, but the primary reason for the focus group versus individual interviews was stakeholder request and expediency. The focus group was audio recorded, transcribed, and then coded using GTAMS analyzer.

Archival data. I collected archival data on the NM EJ executive order's use and the organizational history of the AILC and its relationship to the NMED as a backdrop to the execution of the workshops and the policies that made them possible. I collected archival data on policy use and organizational history from the NMED's solid waste bureau and the AILC.

I consulted the NMED for archival information to determine the history of solid waste permit granting related to the 2005 NM executive order and the NMED Solid Waste Bureau's 2007 articulation of the order into environmental permit policies. Specifically, this information was used to determine how many permits were sought, granted, commented on, contested, modified, or stopped from the time of the executive order to the present. This included determining officially “vulnerable” communities by mapping community location and existing proximity of permitted waste facilities.

I determined pertinent organizational history of the AILC by consulting AILC, UNM, and NMED archival information. This process determined organizational

relationships, vis-a-vis funding, authority, decision-making, etc., to determine potential influences on organizational goals, structure, and culture, primarily for my analysis of isomorphism. I collected these data to determine organizational context and history that might influence the shape of the organization.

Participant observation field notes. Field notes for this project represent observation, meeting notes, and reflections on participation in project implementation over a four-year period. These include detailed notes from the initial reconnaissance phase, the workshop and research planning phase, the workshop execution phase, and the post-workshop outcomes evaluation phase. I took field notes to capture general observations, group process, non-verbal communication, descriptions of settings, seating arrangements, and more. I recorded field notes during planning meetings and the workshops and added reflections after each. I verified and/or clarified leading themes during debriefing sessions held with the other workshop planners after all meetings and workshops. Field notes were compiled and then coded using GTAMS analyzer.

Approach to Data Analysis

Qualitative analysis. Sources for qualitative analysis included qualitative survey responses, field notes, interviews, and archival data. All pertinent data were coded using a strategy modified from Charmaz' (2006) grounded theory methodology.

Coding strategy. Qualitative data were compiled, coded, and analyzed. Following Charmaz' (2006) grounded theory methodology, I began with inductive *initial* and *focused* coding. This was followed by deductive *theoretical* coding using codes from the inductive process and existing literature. Finally, the most fruitful inductive and deductive codes were linked using a variation of *axial*, coding (see Appendix D for

abridged coding scheme). Initial coding consisted of allowing initial themes to emerge from data. Focused coding consisted of selecting and combining the most fruitful of the initial codes to form new theoretical codes. Then, I used a hybrid of Strauss and Corbin's (1998) axial coding and Charmaz' (2006) grounded theory methods to visually and conceptually map relationships within and between codes and their categories. This included connecting inductive and deductive codes that were based on grounded theory and theory from contributing literature that significantly appeared in the data. The outcomes of the code mapping became the main narrative elements in conveying qualitative results.

I employed consensus coding to increase the rigor of the coding process. Consensus coding is used regularly in CP (See Brodsky et al., 2004; Kohfeldt, Chhun, Grace & Langhout 2010; Voorhees, Vick, & Perkins, 2007; others), as well as in many other fields that employ qualitative research. Consensus coding generally consists of multiple coders independently coding each qualitative fragment, then comparing their codes. For inductive coding, coders reach consensus through dialogue about the fragment or table the fragment if consensus cannot be found. For deductive coding, codes chosen by all or most coders are retained and codes chosen by fewer or one coder either are excluded or weighted less than more common codes. Depending on the particular content and coding scheme, consensus coding can take multiple forms but remains an accepted means of boosting coding rigor.

I employed a consensus strategy based on Hill, Knox, Thompson, Williams, Hess, and Ladany's (2005) updated Consensual Qualitative Research (CQR) model with a member of my faculty advisory committee (J. R. Newbrough). CQR involves

synchronous coding of qualitative data, wherein any differences in interpretation are immediately resolved among coders by determining agreement or tabling the qualitative fragment. As Hill et al. (2005) note, there are strengths and weaknesses to this approach; some of the strengths of consensus coding include immediate resolution of inter-rater differences, the creation of clarifying dialogue instead of merely recording differences, and streamlining of the coding mechanism over time. Pertinent weaknesses include the potential for power/knowledge differentials to overrun differences in interpretation and the potential for groupthink among coders.

Strengths of consensus coding were catalyzed through placing emphasis on inter-rater dialogue through the coding process and recording of codes by raters before beginning dialogue. Brodsky et al. (2004) emphasize the importance of seeing research teams as living communities, rather than just focusing on the research participants and their communities. Some of the pitfalls mentioned by Hill et al. (2005) can be avoided by spending time and effort to reflect on the relationship between coders and how it affects the coding process. We infused such reflections into each instance of clarifying dialogue where significant compromise had to be made. Inter-rater consensus was extremely high during our first round of coding (estimated over 95%), with only two fragments completely tabled out of six one-hour interviews. Thus, we determined that sampled consensus coding was sufficient instead of complete consensus coding of all data; remaining qualitative data were coded by me using the coding scheme and deductive codes established during the sampled consensus-coding phase.

Coding diagram. Following (Figure 2) is a sample coding diagram for the *technical focus as form for space* qualitative theme. The concepts within the diagram are

explained in the results section; this is meant as an illustration of the outcome and process involved in mapping the codes. Grounded theory codes derived from inductive initial and focused codes are shown in green and connect to deductive codes from literature shown in yellow.

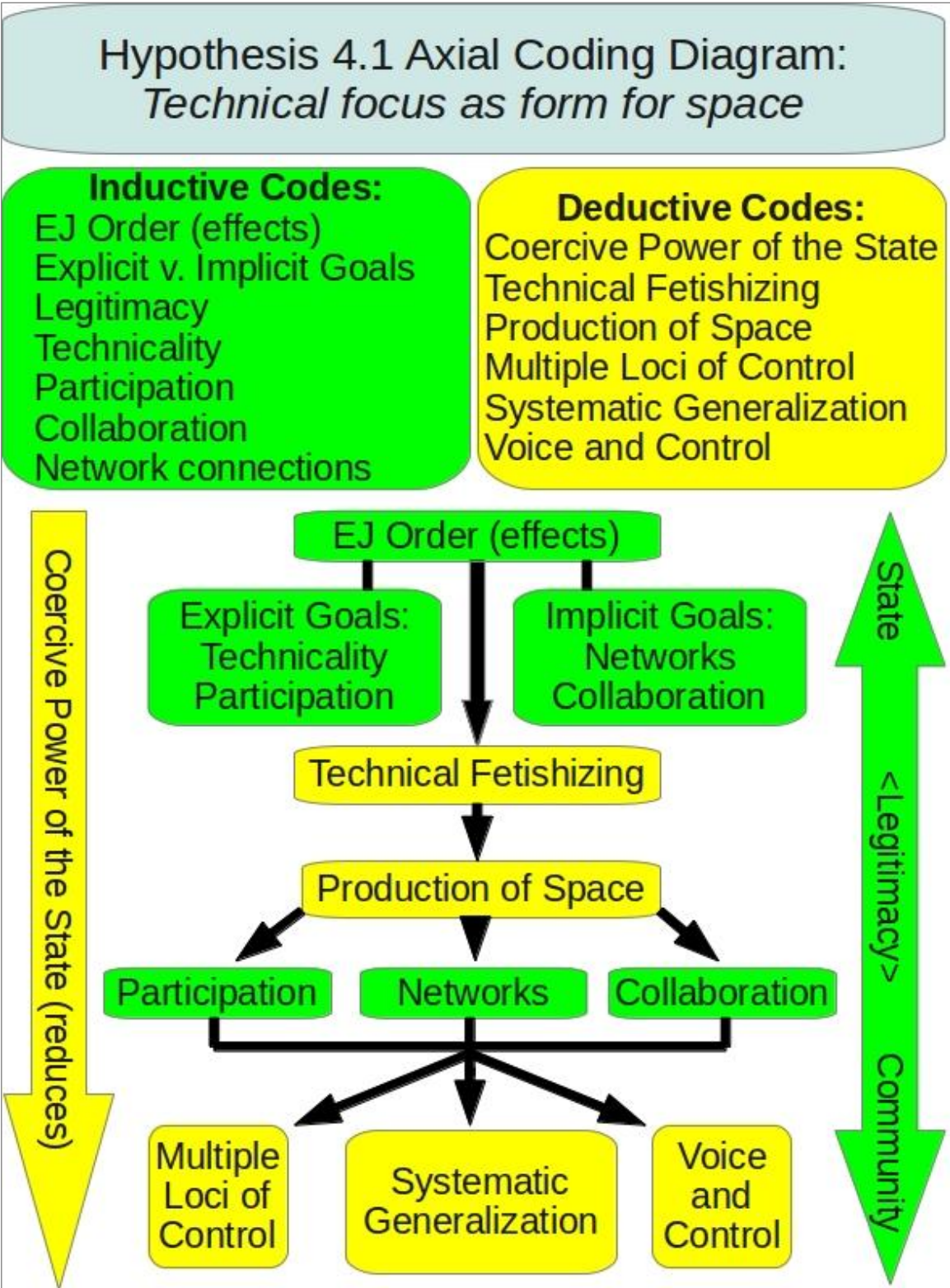


Figure 2: qualitative coding diagram (*technical focus as form for space*)

Geographic Information System (GIS). A GIS maps geographic data to determine spatial relationships. Community researchers increasingly use these sets of spatial tools to determine spatial correlations with demographics from census data. A GIS is uniquely able to visually display complex systems in a manner that can be accessible to diverse audiences (Christens, Hanlin, & Speer, 2007). Luke (2005) stated that a GIS is a rare but needed method for capturing context in community psychology, followed by growing use in CP (see Kloos & Shah, 2009; Perkins, Larsen, & Brown, 2009; Ta, Marshall, Kaufman, Loomis, Casteel, & Land, 2009; Tsai, Mares, & Rosenheck 2010; and others). For this study, a GIS is an ideal tool for testing the spatial criteria of the EJ provisions.

To create a GIS, I first employed the ArcGIS program to map locations of existing point-source pollution operating under a permit. These locations were limited to permitted sites qualifying under NMED solid waste EJ provisions (permit-holding, active, point-source pollution not subject to quasi-judicial industrial zoning). I retrieved street address locations for permit-holding solid waste sites from one of the EJ liaisons, geocoded them using GPS Visualizer, and then mapped them using ArcGIS. Coordinates for other permit-holding sites that qualify for the determination of vulnerable communities were only available by stripping the coordinates out of the NMED's ArcGIS server. As individually copying out coordinates for hundreds of sites was an inefficient means of accumulating site locations, I mapped the sites directly on the NMED ArcGIS server. Once all relevant sites for pollution sources were included, I mapped radii of these sources to determine proximity to vulnerable communities and other waste sites. Once radii convergence was mapped, I determined the locations of communities that were at

risk for being in range of multiple sources that could qualify the community as *vulnerable* if they met all other criteria. For clarity and legibility, I enhanced select maps using GIMP image software.

Social Network Analysis (SNA). SNA is a method for analyzing and visualizing individuals, organizations, and other scalar aggregates by focusing on actors and their relationships with each other to find emergent qualities. Luke (2005) notes the utility of SNA for community psychologists and its use in CP is growing (see Freedman & Bess, 2011; Hughey & Speer, 2002). My use of SNA in this project is limited but provides a useful comparison.

The main purpose of this analysis was to understand the position and importance of the EJ Tribal Liaison for the planning and implementation of EJ policies and the resultant workshops. To this end, I gathered qualitative network data on core participants responsible for the creation and execution of the workshops. This included actors, linkages and their attributes, and strengths of the linkages. I quantitatively coded network linkage strengths based on professional and personal connections (1-5), rating them based on observed and reported data (See Appendix E for coding scheme). I then used a network visualizing software program, SocNetV, to create a network map illustrating basic network structure. To determine the importance of the EJ Tribal liaison to the network responsible for the permitting workshops, I then created a network map with the EJ Tribal liaison removed. Although I originally intended to run network metrics to determine the character of the hypothetical network, the removal of the EJ Tribal liaison completely split the network into two discrete networks formed by separate

organizations. This sufficiently illustrated the importance of the EJ Tribal Liaison, so I did not run any further metrics.

Quantitative analysis. I tallied quantitative items from the surveys using LibreOffice Calc. Calc is a spreadsheet program that quickly and simply performs statistical summaries of data sets. I produced summary statistics and central tendencies for quantitative items. Further analyses were not possible due to the low Time-2 response rate.

CHAPTER V

Results

The following are results of my research methods and analyses, ordered by the research questions. The format follows Charmaz' (2006) structure for grounded theory reporting. Although findings result from a mixed-method design, the grounded theory reporting structure is most suitable considering my primary reliance on grounded theory analysis. This format includes statements of the core findings from analyses, elaboration of those findings, and supporting data fragments that exemplify the finding. In this respect, Charmaz' (2006) reporting method differs from previous grounded theorists who argue that data do not belong in the reporting of results (much like excluding quantitative data points when reporting quantitative analyses); Charmaz' (2006) asserts (and I agree) that the inclusion of supporting data fragments retains the voices of participants and builds a stronger narrative.

Research Question 1: Isomorphism

The first research question asks: In what ways is the core stakeholder organization subject to isomorphism? How does the core stakeholder organization maintain legitimacy? How does isomorphism within this context constrain or facilitate the organization's role in promoting environmental empowerment? Each element of the question is addressed below:

In what ways is the core stakeholder organization subject to isomorphism?

DiMaggio and Powell (1983) described mimetic isomorphism [response to uncertainty], normative isomorphism [professionalization toward homogeneity], and coercive isomorphism [taking on the form of powerful organizations to gain legitimacy] as the mechanisms by which organizations often have more in common with other organizations in similar contexts than to organizational structures best suited to achieving their own core mission. Each of these types of isomorphism can potentially aid an organization in achieving best practices and greater efficiency or practices that draw them further from their organizational goals through adopting prevalent, yet potentially irrelevant practices. The core stakeholder organization (AILC) and other organizations – both tribal and government – are subject to all three forms of isomorphism in some fashion.

The AILC maintains a balance of isomorphism that promotes best practices without diverting them from their organizational goals. Although the AILC shares certain attributes with similar organizations and must interact professionally with numerous government, academic, nonprofit, and community entities, it seems to be able to choose attributes and relationships that best serve its core mission rather than merely serving to bolster legitimacy. The AILC operates within multiple established organizational fields. Within each of these fields (such as law and legal training, academic, and tribal government), different sets of organizational behaviors gain legitimacy. Spanning these sectors while maintaining sufficient legitimacy in each would be beyond the capabilities of many organizations. The AILC's ability to do this while maintaining a healthy balance of isomorphism is worthy of note.

AILC and mimetic isomorphism. The AILC responded to early organizational uncertainty with mimetic isomorphism but has stabilized over its 45 years. Early history of the AILC shows diverse efforts to achieve legitimacy, such as establishing a mission statement, a board of directors, offering coursework through the university, reaching out to varied tribal interests in New Mexico and beyond, and performing legal research for tribal community benefit. Although current AILC work is not especially different from its early work, the organization has focused its efforts. One administrative worker expressed that recent efforts to include tribal representatives in planning processes has added significantly to their credibility: "...tribes look to the Law Center and they have in the last few years for training and technical assistance and...this is just one example of the credibility of the Law Center..." By regularly consulting and including tribes, establishing a regular curriculum for tribal pre-law students, presenting several times a year on legal codes relevant to tribal judges and organizations, and providing training to tribal communities, the AILC has honed its early efforts into legitimate and consistent organizational practices. It also became evident during participant observation that long-standing community connections and family relationships bolstered organizational relationships. AILC workers maintained relationships with relatives occupying positions of power within local tribes and professional relationships from their tribal community of origin (among other relationships). Together, these practices and connections have cemented the AILC's practices and goals beyond a level of uncertainty that would result in further mimetic isomorphism.

AILC and normative isomorphism. The AILC is subject to significant normative isomorphism due to the strict professionalization of legal training but balances those

forces through internal training and choosing staff that have personal, community, and cultural stakes in promoting practices in line with organizational goals. All AILC staff members have legal training of some kind, but, since it emerged from the UNM School of Law, the AILC has diversified staff and training so that not all employees have the same form of professionalization. The director is a practicing attorney and the senior policy analyst has pre-law training – both of which constitute strict professionalization. The fact that the AILC actually trains future tribal attorneys provides them with the ability to replace or balance standard legal professionalization with practices relevant to tribal interests. Additionally, staff members seem to be chosen not only for their skill and training, but also for their devotion to core organizational goals and the rights of tribal communities. This resistance to broader normative isomorphism has created its own normative professionalism by training some of its staff and collaborators – including the NMED Tribal Liaison, who shared allegiance with the NMED, the AILC, and tribal interests. Thus, not only has the AILC's practices aided in resisting internal mimetic isomorphism, they have created connections and influence in other important agencies.

Legal professionalization resulted in excessive emphasis on technical expertise. Workshop planners were most comfortable with the content of presentations when “the experts” had been brought in to present. Participants in the workshops also showed a reverence for technical expertise. Some level of technical expertise is necessary and useful in both legal and environmental arenas but the reverence extended beyond the ability to perform necessary functions. As a participant observer, some of the planning team treated me as a subordinate with little value until I began to present my efforts in highly technical language. Until I evidenced skills and knowledge beyond their grasp, I

was perceived by some as lacking value. This focus on technical expertise is reinforced by workshop participants who seemed in awe of the technical knowledge of legal and environmental workers. Even though many workshop attendees are experts in their own right, they overwhelmingly reported that acquisition of technical knowledge was of primary importance – even though much of it was from other jurisdictions.

AILC and coercive isomorphism. The AILC avoids coercive isomorphism through diverse funding sources, unique organizational relationships with federal, state, and tribal government entities, and efficient operating budget and staff numbers. The establishment of multiple funding streams for organizational efforts ensures that no other single entity has sufficient power to exert over the AILC's organizational structure. The AILC is a non-profit organization housed in the University of New Mexico's law school that advises tribal courts, attorneys, etc. on law and policy issues and runs courses for Native American law students. This position as a non-profit housed in an academic setting – without direct connections to university and state bureaucratic politics. The AILC director stated that many tribal entities assume that the AILC is part of the university system. Their relationship with UNM Law provides space and opportunities that would be far less accessible but the AILC's responsibility to UNM is specific and limited. Much of the AILC's funding comes from UNM for coursework and internship opportunities that the AILC provides for American Indian and Alaska native pre-law students at UNM – although, like many non-profits, their operating budget comes from multiple sources, such as federal funding (BIA), grants (e.g., the EPA grant for this project), and state government funding (Through UNM).

The AILC maintains sufficient familiar structure and personnel positions – such as a board of directors, a director, office associates, a mission, and annual budgets – to fit in with other university operations and allied organizations. The AILC has fluctuated in size over its lifespan, generally being larger than its current size. Other positions within the organization existed at different times throughout its lifespan, but the current lean incarnation of the AILC has a sustainable balance of resources to output and sufficient productivity to maintain legitimacy and a positive public reputation. The AILC's position within an academic setting partially shields it from coercive isomorphic forces that a freestanding organization would necessarily be forced to respond to and potentially yield. It is apparent that UNM Law and the AILC have developed a symbiotic relationship that neither would readily threaten.

In its current incarnation, the AILC demonstrates a history of mimetic isomorphism when it faced early uncertainty and during major shifts but currently resists coercive isomorphic forces that would threaten its ability to fulfill its goals. The organization's responses to novel demands from tribal organizations, government entities, and the University either have had little influence on the organization's current structure or do not seem to obstruct the mission of the AILC. It is likely that in the organization's past, some of these relationships exerted influence over the organization's structure, but these influence are not held in the current institutional memory. Currently, neither funding sources nor other organizational contexts divert the AILC from its mission, "... to strengthen, promote, and honor self-sustaining American Indian and Alaska Native communities through education, training, and leadership" (AILC, nd).

How does isomorphism within this context constrain or facilitate the organization's role in promoting environmental empowerment? The AILC's organizational context facilitated its role in promoting EE. It is evident from this study that formal environmental empowerment exists at multiple levels. Although the AILC creates spaces for EE through workshops and training, they rely upon opportunity structures at higher scalar levels. Ecologically, multiple nested systems exert power vertically and horizontally and are mutually subject to influence. The AILC must respond to pressure from higher scalar entities (government), entities in related sectors (tribal government entities, such as tribal environmental agencies), and many individuals or smaller organizations (local judges, local tribal advocacy groups, etc.) while exerting influence as well. It was evident from participation and statements from tribal leaders that environmental issues are very important to the tribes, but many priorities have taken precedence over EJ issues. Without the influence of the EPA grant and the NMED EJ Liaison, the AILC may not have created the permit workshops when they occurred (if ever). Even the AILC's responsibility to coordinate the annual Tribal Leadership Conference allowed the pursuit of EJ and EE. In this way, the AILC was subject to facilitating contextual forces in its work to promote EJ and EE.

The workshops conveyed information that may constrain or facilitate EE, depending on the participant organization and their use of the information. The AILC and NMED designed the workshops to convey important technical and theoretical information to NM tribes. Beyond conveying procedural information for tribes to better navigate the State's environmental permit process, many tribal participants intend to utilize the NMED's environmental permit information to revise or create their own local

regulations. This could be a great advantage to tribes without sufficient environmental protection policies in place. It could also lead to mimetic or coercive isomorphism among tribal environmental organizations, leading them to adopt environmental permitting standards out of expediency rather than expending the (likely unavailable) resources to create standards more tailored to local needs. As previously stated, this has significant implications for tribal organizations' capacity for formal EE. This could result in diminished capacity for tribal communities to participate in environmental decisions and less trust in tribal environmental organizations; not only would this drop in legitimacy with the community come from less tangible opportunities, but from the tribal organizations taking on the character of federal and state organizations that can be unpopular with tribal communities. Over one quarter (27%) of participants specifically stated that they will utilize the environmental permit information to create or enhance their local environmental programs, policies, codes, and/or procedures. In the long term, this may mean widespread adoption of comprehensive environmental standards that aid tribes in protecting their lands. Conversely, this might also lead to the widespread adoption of policies and procedures that appear comprehensive and technically sound but are just as problematic for protecting tribal environmental resources as existing State regulations.

How does the core stakeholder organization maintain legitimacy? The AILC maintains organizational legitimacy by maintaining positive relationships with constituents, keeping current with relevant laws/legal procedures and training others to use them, and choosing projects that will have the most utility for tribal communities. Participant observation evidenced significant routine in the planning and execution of the

workshops; tribal representatives, presenters, leaders, and participants had obviously been involved in previous efforts by the AILC and were confident that it would be relevant and effectively run. Relationships between AILC personnel and participating tribes showed evidence of positive maintenance. The AILC also works very hard to remain relevant; the director stated that, "...we want to keep relevant and we want to make sure that we are addressing some of the needs that are there..." This relevance must be balanced with the size of the AILC, as an organization of its size (generally less than 5 full-time employees) cannot pursue as many opportunities for action.

The AILC stretched the boundaries of its legitimacy to lend legitimacy to the workshops. Throughout discussions at workshops, in the focus group, and in interviews, it was evident that tribal faith in NMED or EPA regulations to protect tribal environmental interests was not high, and, in some cases, extremely low. Two high level NMED workers also stated that general citizen faith in NMED codes and procedures is low. Many codes – patterned after EPA codes to receive federal funding – are extremely complex and poorly suited to New Mexico's geography and rurality. This resulted in more expensive waste services for communities, citizens feeling alienated from the NMED, citizens circumventing the rules by dumping illegally, and lowered legitimacy for the NMED. As a result, illegal dumping on tribal lands increased. This lack of faith from tribal and non-tribal communities constituted a significant barrier for making the workshops legitimate for the participants. Additionally, the NMED was initially suspicious of the AILC's motives for including them in the workshops, creating another barrier. The AILC and other planners brought stakeholders together with skill and at some risk. If the workshops turned adversarial, the AILC would likely have lost significant

social capital.

One example of the AILC's efforts to create legitimacy of the workshops was the inclusion of traditional tribal prayers from tribal elders to open and close the workshops. Although the prayers could be interpreted as just formalities, such elements of the workshops helped bridge the world between bureaucratic machinations and culturally valid space. The prayers seemed to bless the process – granting permission for the interactions and contributions between the presenters, participants, and coordinators. This may have added to subsequent feelings of acceptance between collaborators and the overall legitimacy of the process.

Research Question 2: EJ Provisions and Environmental Empowerment

The second research question asks: In what ways do EJ provisions within the NMED create capacity for formal, intrapersonal, instrumental, and substantive environmental empowerment? Specifically, in what ways do formal, intrapersonal, instrumental, and substantive environmental empowerment result from: a) The EJ Liaisons (both the structural position/role and the functional performance of personnel within the position/role)? b) The permitting workshops? c) The NMED Solid Waste Bureau's EJ provisions?

As outlined previously, formal environmental empowerment consists of opportunities for meaningful participation and decision making through governmental and private institutions coupled with a capacity for participation among community members and organizations. Intrapersonal environmental empowerment consists of feelings of personal competence related to the larger process of community empowerment. Instrumental environmental empowerment consists of an actual capacity

for meaningful participation. Substantive environmental empowerment consists of actual decisions that solve problems and reach desired outcomes. Each element of the question is addressed in the following passages.

In what ways do formal, intrapersonal, and/or instrumental environmental empowerment result from the EJ Liaisons? The two EJ Liaisons occupy positions created under the NMED's EJ provisions. At the time of this research, one was charged with promoting EJ with respect to NMED and tribal relations within the state. The other was charged with promoting EJ with respect to border communities (colonias) in the southern part of the state.

EJ Liaisons and formal environmental empowerment. The NMED EJ Liaisons act as both substantive, tangible results of the EJ Executive Order and as structures for formal environmental empowerment and enablers for further EE. One of the most important and substantive results of the EJ order was the creation of the two EJ Liaison positions. The structural position of the liaisons bridges otherwise separate networks and the workers occupying the positions during the time of this research worked beyond this potential to create more opportunities for EJ. Thus, in this case, the EJ order is fulfilling its stated goal of increasing meaningful participation. Both EJ Liaisons spearheaded workshops to educate the public – specifically tribes and colonias – about environmental permit processes and EJ. Past and future workshops hold much potential for creating meaningful spaces for participation. Aside from their normal work creating more amicable connections between tribes, colonias, and the NMED, these workshops show the EJ Liaisons' devotion to promoting greater participation in the permit process. These workshops and their effects also show the overlap between different elements of

environmental empowerment. The EJ Liaisons and their efforts create substantive environmental empowerment (such as tangible network connections, actual workshops that include spaces for participation, and more) but can also be seen as agents of formal environmental empowerment (representatives of structures that allow and enable citizen participation in environmental decision-making).

The Tribal EJ Liaison is an essential part of the network necessary for the existence of the permitting workshops. As an example of the influence of the position, Figure 3 shows a network diagram with the EJ Liaison in their actual position of influence and Figure 4 shows a hypothetical network diagram without the EJ Liaison. These network diagrams include NMED workers who presented in the training workshops, AILC workers, and the tribal representatives that presented in the workshops. They are illustrations of the difference in structure and potential for action toward participation and EJ created by the EJ Liaison positions.

Environmental Justice Permitting Workshop Network Diagram

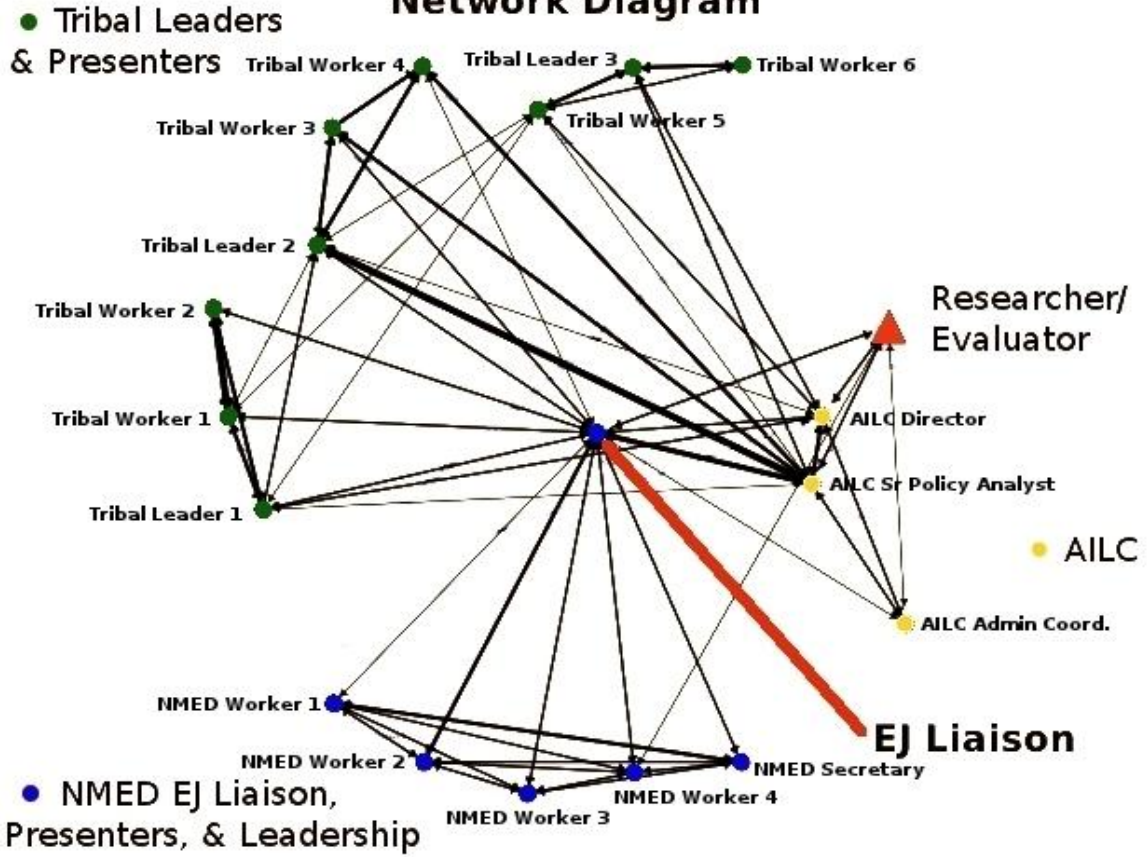
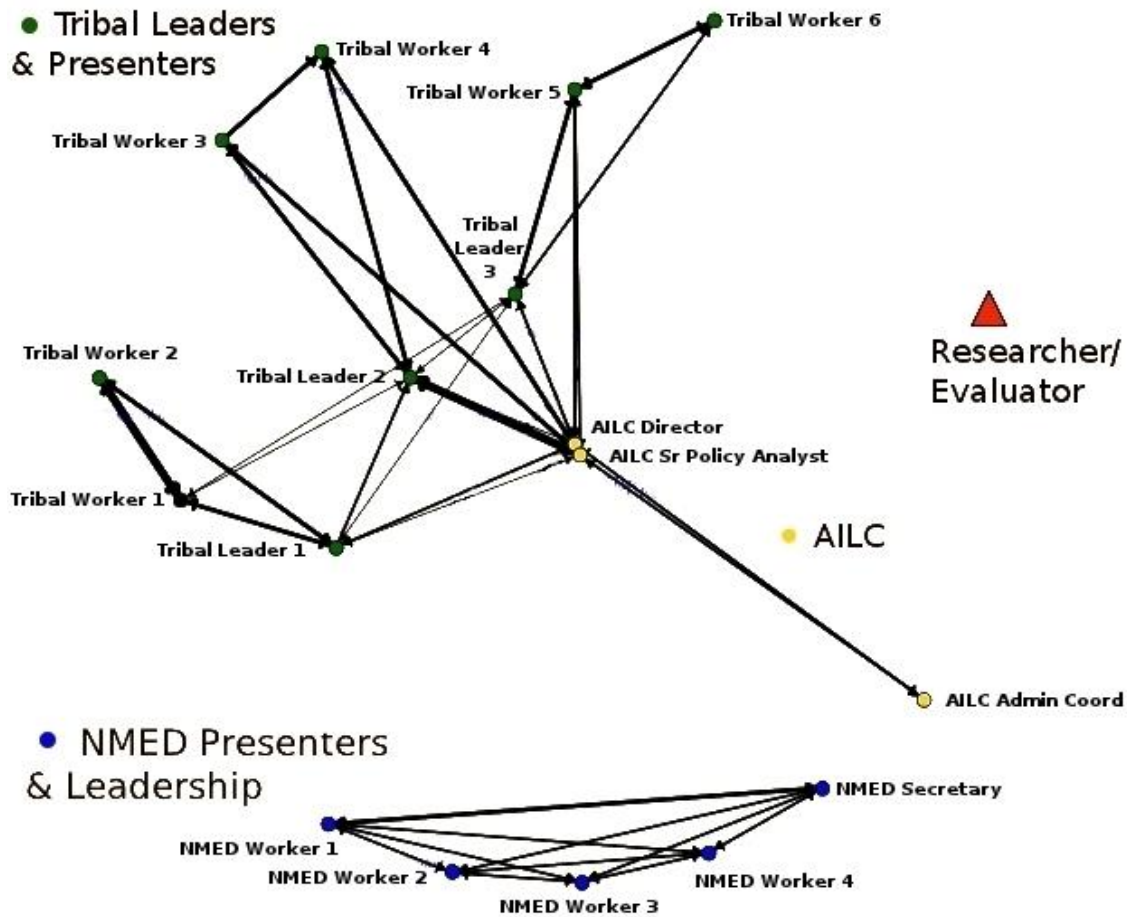


Figure 3: Environmental Justice Permitting Workshop Network Diagram

Environmental Justice Permitting Workshop Network Diagram (Minus EJ Liaison)



Legend

- ● ● People involved in the permitting workshops
- ▲ Researcher/Evaluator (Author)

Figure 4: Environmental Justice Permitting Workshop Network Diagram (Minus EJ Liaison)

As is evident from comparing the two diagrams, the EJ Liaison position was crucial for the successful creation and execution of the workshops. Without them, the NMED has no significant linkages to the AILC or tribes. Although the workshops would still be possible, they would require the building of linkages between sectors that have

little or no history of cooperation. This comparison clearly shows the importance of the position as formal environmental empowerment. The liaison formed an intermediate formal position bridging otherwise disconnected actors and organizations.

The Environmental Justice Liaison positions created by the NMED are flexible enough to be effective when occupied by someone whose values, skills, and networks follow the stated intentions of the EJ order but ineffective when occupied by someone who does not fit these criteria. The positions are less defined and stable than the provisions set forth by the bureaus. Each of the two positions is charged with promoting EJ within and outside of the NMED while acting as a liaison with communities that are more likely to be experiencing environmental injustices (so-called *vulnerable* communities). Initially, one has been tasked with acting as a tribal liaison while the other as a liaison with colonias (settlements along the Mexican border) in the southern part of the state. These positions seem poorly defined and overburdened with significant responsibilities. Additionally, the two EJ Liaisons seem disconnected, evidenced by the fact that both had embarked on similar projects to create training workshops but neither knew about the other's plan. Their abrupt move from the NMED Secretary's office to a more remote physical and organizational position evidenced the instability of the positions. During the period of this research, both EJ Liaisons still achieved significant gains in creating and maintaining spaces for meaningful participation for marginalized peoples but one took a new position soon after. As further evidence of how the person occupying the position drives its potential, the new Tribal EJ Liaison is not from a tribal community and during the course of this research (before he took the position) claimed that he knew little about EJ. Additionally, the position title changed to *The Mining and*

Tribal Liaison, adding mining interests to the title and dropping environmental justice (although it still appears in the job description), signally a potentially major shift in formal EE. This shift in priority, nomenclature, and interest in EJ will likely have a major impact on the focus and success of the position in creating meaningful spaces for the pursuit of EJ and EE.

EJ Liaisons and intrapersonal environmental empowerment. The EJ Liaisons promote intrapersonal environmental empowerment by providing opportunities for community members to learn skills, build knowledge, and practice participation. As evidenced previously, the Tribal EJ Liaison was an essential element in the creation of workshops that promoted citizen participation and empowerment. The Tribal EJ Liaison regularly consulted with tribal communities to aid them in navigating state bureaucracy. In addition, the Border EJ Liaison continues to create opportunities for citizen participation. A high level NMED worker praised the Liaison's efforts and stated increased citizen participation and confidence that their efforts would be fruitful – especially traditionally disenfranchised peoples (such as non-English speakers and undocumented immigrants). She stated that the, “...best thing is keeping communication pathways open...[it's] not good to run away and have a hearing without them.” This indicates that successful two-way communication and meaningful participation are priorities in the NMED. Multiple conflicts have also been avoided or diffused through clear communication that is becoming a norm for public hearings. It is a hope-inducing development that numerous NMED workers now have the attitude that the process of interacting with community and industry should be collaborative and informed. For one NMED administrator, this awareness came from, “...chatting with people and realizing

we are all people,” and that, “most people just want their questions answered and answered honestly.” According to this NMED administrator and one of the EJ liaisons, the increases in community member efficacy in public hearings stems from such common understandings and repeated participation. The increased intrapersonal environmental empowerment of community members would be ideally measured directly, but reports from NMED sources, such as above, are an indication that participation efficacy and ability are a priority and may be increasing.

EJ Liaisons and instrumental environmental empowerment. The EJ Liaisons likely created instrumental environmental empowerment – although it was not directly measured. Through the workshops and their regular work for the NMED (as mentioned in the previous section on intrapersonal environmental empowerment), it is likely that the information conveyed to communities was, at least partially, absorbed and put to use. The connections, skills, and knowledge from the workshops most likely to result in instrumental EE are the direct network connections with NMED workers, skills for navigating the NMED permitting processes, and knowledge from the NMED codes for the creation of local codes. This research did not directly measure knowledge and skills resulting from neither the workshops nor other allied efforts, so instrumental environmental empowerment can only be theorized.

EJ Liaisons and substantive environmental empowerment. The EJ Liaisons represent and create substantive environmental empowerment. The EJ Liaisons are a long-term structural change to the NMED, representing tangible effects of the EJ Executive Order. Simultaneously, the EJ Liaisons have the capability of enabling substantive environmental empowerment through their work. Both EJ Liaisons at the

time of this research promoted greater say in permit content and more opportunities for meaningful participation by citizens. Since the permitting workshops for tribes took place, the Border EJ Liaison has put on multiple workshops for colonia residents in the state. Whether these workshops were influenced by the tribal versions or are evidence of a cultural shift toward greater participation in NMED processes, more opportunities for the promotion of EJ are emerging. According to both EJ liaisons and a high-level NMED administrator, the collaborative nature of the trainings and meetings has drawn more people from marginalized communities than ever show up to more traditional hearings where they are, in the words of the high-level NMED administrator, "...learning that they have a voice." This rise in attendance and participation is precisely the kind of activity that the EJ Executive Order explicitly aimed to increase and the EJ Liaisons are the most effective way that this activity has increased. As outlined in the previous section on *EJ Liaisons and intrapersonal environmental empowerment*, according to NMED employees, participation and its prioritization have increased among community members, NMED employees, and relevant organizations. High-level NMED workers specifically cited both sets of workshops as having a tangible positive effect on relations between the NMED and both tribes and colonias. Although more distal outcomes have yet to be measured, these markers of substantive environmental empowerment are a necessary step toward a culture of participation among underrepresented peoples and organizations that wield power over environmental decisions.

In what ways do formal, intrapersonal, and/or instrumental environmental empowerment result from the permitting workshops? The permit workshops were specifically intended to aid tribal communities and tribal environmental organizations in

understanding and participating in NMED permit processes. The original intent was to first educate attendees on EJ issues in New Mexico, then introduce attendees to local efforts by tribal environmental workers to address environmental issues, and finally educate attendees on the technical elements of NMED permits. The NMED and the AILC co-created the workshops with significant input from tribal leaders, tribal environmental representatives, and me. The EJ directive for the NMED and the existence of the EJ Liaison position paved the way for NMED's participation in leading the workshops and cooperating with tribal environmental workers. The Permitting 101 workshops were clearly the result of intersectoral collaboration between organizations but could not have taken place without the EJ executive order and the NMED provisions. In this way, the workshops are the result of other empowering structures and actions but also yield empowerment themselves.

Permitting workshops and formal environmental empowerment. The Permitting 101 workshops displayed simultaneous presence and absence of formal environmental empowerment. The creation of formal environmental empowerment was partially explicit, but the majority of formal environmental empowerment created by the workshops was either an unintentional or an implicit result. Additionally, some explicit goals of the workshop that would result in formal environmental empowerment were lacking.

The inclusion of tribal perspectives and experiences with environmental issues was perceived by planners as essential for participation by tribal peoples. This element was explicitly part of the workshops and successfully executed – setting the stage for the workshops to create formal environmental empowerment. Beyond increasing

endorsement and participation, the inclusion of tribal perspectives set the stage for important networking, which was one of the most important results of the workshops.

One presenter and planner stated:

...it's important obviously to get the state perspective and the state information out there to the tribes but having a tribal perspective on...the issues that we dealt with throughout the training was important because it lets tribal departments see how other tribes in New Mexico are doing it. But more importantly, I think it allowed the state representatives to be able to get to know some of the tribal representatives and actually get some faces connected to some names that they may have never met before and it definitely went a long way in creating those relationships that are so important in collaboration or partnerships that might happen.

This representative perspective outlines the successes of the workshops; technical information needed to be conveyed, but the tribal perspective was essential for showing how the “nuts and bolts” of environmental permits could be used to their advantage. Additionally, there have been instances of adversarial relationships between tribes and government, making the tribal perspective integrated into the workshop important. The presenter notes the importance of participant perceptions of the process and how vital networks and personal relationships are to the process of problem solving. A high-level NMED worker added that, “One of the most important aspects of those meetings is that people get your card.” Also, one of the workers from the AILC that has planned and executed multiple workshops in the past stated that tribal endorsement of the process is one of the most vital elements in participants attending, being attentive, and later using the information and skills. Thus, the presentation of tribal perspectives is an integral part of the workshop process and its ability to produce formal environmental empowerment.

Tribal participants in the workshops were extremely attentive during the tribal presentations and rated them very highly, second only to the technical presentations.

Almost half (43%) of participants listed the tribal presentations as the *most* useful or equally useful aspect of the workshops and also reported that they acquired new knowledge about environmental risks and their relationship to tribal interests ($M = 4.16$ [agree] on a 5 point Likert-Type scale ranging from Strongly Disagree [1] to Strongly Agree [5], $SD = 0.62$). Together, these findings indicate that the explicit goal of presenting a tribal perspective was successful and that tribal participants found it useful. The tribal presentations set the stage for networking, information sharing, and resource sharing among organizations – all necessary for formal environmental empowerment.

The explicit goals of the workshop were overshadowed by results that were either unintentional or implicit goals. The workshops acted as enablement structures for relational activity (e.g., collaboration and communication) that outweighed the usefulness of the transfer of technical knowledge (e.g., elaboration of guidelines) that was the core explicit goal. Participant observation revealed significant use of workshop time used for creating, maintaining, and expanding professional networks – both within tribal groups and between tribal attendees and NMED personnel. Follow-up interviews strongly supported this finding and showed willingness to collaborate across sectors. As the history between tribal communities and state entities has often been strained and often emerges out of acute necessity, movement toward preventative cooperation is promising. A high-ranking AILC worker noted that distrust before the workshops ran in both directions. According to this worker, early in the planning process, NMED representatives were visibly unsure of the AILC's intentions – perhaps due to their legal advocacy work. Coupled with the long-standing distrust of government by tribal peoples, there was much room for improvement in relations. Both NMED and tribal workers

expressed willingness and eagerness to work together on environmental issues during follow-up interviews shows significant increases in formal environmental empowerment.

The need for further network connections was clearly evidenced in the survey and participant observation field notes. Participants stated that they had insufficient professional and social networks for using the presented materials. This emphasizes the role of network connections as formal environmental empowerment and a precursor to other elements of EE. Almost two thirds of survey respondents (65%) stated that they need to build relationships with tribal leadership to use information from the workshop. More than half (55%) of respondents say that they need to establish relationships with tribal community members while more than half (53%) stated that they need to build relationships with government workers. Almost half (42%) need relationships with policy makers, and almost one fifth (19%) need to network with other communities to use workshop information. These needs at the time of the workshop clearly show the importance of collaboration across sectors and organizations.

Although the networking and collaboration at the workshops resulted in tangible gains and formal environmental empowerment, significant barriers are still present. The workshops provided opportunities to network with technical experts that could work with them in the future, but the primary role of government workers does not include consultation with other regulatory entities – making their ability to provide technical support limited. These and other barriers still stand between participants' intent to use workshop knowledge and their ability to use it. Ideally, the collaborative atmosphere and network connections will trump the limitations of organizational roles.

Another implicit or unintentional result of the workshops that has the potential to result in formal environmental empowerment is the modeling of relational interactions during the workshop planning and execution. The workshops modeled collaborative interaction between tribes, the state, organizations, and universities. After the initial tension previously described, collaboration across all involved sectors became evident. Interactions were respectful, appropriately informal, and friendly. The core purpose of the collaboration was to cover necessary content areas but it also served to encourage relational functions. Technically speaking, the workshops required the inclusion of NMED permit information, experts on EJ, and local experts that had previously navigated tribal-state environmental interactions. Fortuitously, this collaboration modeled the relational cooperation that has been one of the greatest outcomes of the workshops and is foundational for formal environmental empowerment.

The relatively horizontal structure of the workshop creation and execution not only aided in producing more collaborative solutions for the workshops themselves but also modeled a more social construction of knowledge. Moving away from an expert driven model of knowledge and action, cooperative attitudes were evident in participants long after the workshops. This was evidenced by statements in interviews with NMED, AILC, and tribal employees stating that they were more willing and able to coordinate efforts across agencies. It did not only affect attitudes; several tribal attendees worked to create a memorandum of understanding with NMED within a year of the workshops – taking a position of power in a previously imbalanced relationship. Although this does not prove causality, there is potential influence of the workshops to increase collaboration between tribes and the state that sets the stage for formal environmental empowerment.

The core goal of the workshops was to convey useful information and skills to participants. This goal exists within the context of the participants' abilities and opportunities in their organizations and communities. Although significant collaboration emerged from the workshops, many resources were still lacking. In order to use workshop information in participants' communities, almost half (44%) need support from tribal leadership, more than two thirds (37%) need further professional relationships, and almost one third (32%) need more money. Due to these needs, technical information and skills from the workshops were not necessarily readily usable by participants. This indicates a lack of formal environmental empowerment that could have been addressed within or parallel to the workshops. Again, the collaborations and atmosphere of cooperation can overcome some of these barriers, but addressing them directly would likely have been more efficient for establishing formal environmental empowerment.

Permitting workshops and intrapersonal environmental empowerment. The workshops created intrapersonal environmental empowerment by increasing participant knowledge that they believe to be useful. This perceived increase in knowledge about technical procedures and environmental risks likely increases efficacy to act on the knowledge (intrapersonal environmental empowerment). Participants also stated their intent to use workshop information, adding to the case that the workshops increased intrapersonal environmental empowerment. Additionally, the perceived increase in knowledge may also evidence an *actual* increase in knowledge, indicating increased instrumental environmental empowerment. Perceived increases in knowledge were also measured in presenters from the AILC and the NMED, who were already part of a cycle

– as theorized by Rich et al., (1995) – of intrapersonal environmental empowerment through previous roles in workshops and presentations.

Workshop attendees perceived increases in knowledge about EJ – bolstered by participant observation of displayed absorption of knowledge. Participants stated in survey responses that they acquired new information about EJ and the EJ Executive Order ($M = 4.23$ [agree] on a 5 point Likert-Type scale ranging from Strongly Disagree [1] to Strongly Agree [5], $SD = 0.70$) and that they understood the information presented ($M = 4.14$ [agree], $SD = 0.66$). Participants indicated that the EJ presentations were relevant to the work they currently do ($M = 4.33$ [agree], $SD = 0.78$) and that they, their organization, or their tribal community was facing a current issue where the EJ information was useful ($M = 4.11$ [agree], $SD = 0.78$). Participants also replied in the survey that they acquired new technical information about environmental permitting ($M = 4.10$ [agree], $SD = 0.72$) and that they understood the technical information presented ($M = 4.04$ [agree], $SD = 0.70$). Q & A sessions revealed questions based on prior knowledge blended with acquired knowledge from the presentations. This was especially evident in the Water Quality workshop, where participants showed significant sophistication when discussing tribal EJ issues and sustained lines of questioning that synthesized EJ issues with technical considerations. Knowledge about tribal EJ was also evident in the fourth workshop that focused on tribal leadership, where discussions between current and former tribal leaders, panel experts, and tribal community members were sophisticated and contained narratives that displayed applied knowledge of EJ principles.

Intrapersonal environmental empowerment was sufficient for some participants to project uses for workshop information. Over one quarter (27%) of respondents plan to

use workshop information to create or enhance policies, codes, and/or procedures. Almost one fifth (18%) plan to share workshop information with colleagues, employees, employers, and communities. About one eighth (13%) of respondents plan to use workshop information to comment on – and better scrutinize – permit notices and existing permits. About one eighth (13%) plan to use information for outreach and communication with tribal leadership. Several (8%) plan to use workshop information for networking and several (6%) will use workshop information to help with enforcement of tribal environmental codes. A few participants (5%) plan to share information with tribal communities and use it for planning and strategizing. A few (3%) respondents plan to use workshop information for general communication, education, and training, while one respondent will use workshop information to gain new resources.

Presenters generally felt that their capacity to communicate EJ principles increased for each workshop as they honed their presentations and learned from other presenters. An AILC administrator that spoke at the first three workshops stated that she started out without, “...much exposure to environmental justice...” and, “...definitely learned a lot...personally about what environmental justice is, what the purpose is, and how the process works in terms of permitting...” Some presenters learned technical information through the process of planning and implementing the workshops that led to more integrated and complete information as the workshop schedules progressed. Simultaneously, presenters were given the space to present using their own judgment and expertise; one presenter from the NMED said that they, “...had a lot of control over [the content]. They gave me guidelines...nobody came in and edited my presentation.” All presenters and planners felt that the workshops were an effective means of presenting

information about EJ and provided a good balance of theory, narrative, and technical information. One presenter stated: “I think it went really well. We got our information out there...we had, what, 20 or 30 attendees and they asked a lot of good questions.”

Permitting workshops and instrumental environmental empowerment. Findings evidence indications of instrumental environmental empowerment among workshop participants and presence of instrumental environmental empowerment for workshop presenters. As outlined in the previous section, participants perceived an increase in their useful knowledge relevant to issues faced by their communities. These responses to surveys indicate significant positive initial response to technical details of the NMED permit processes, which are instrumental for participants to understand and better navigate them. Although such findings are hopeful, they do not directly evidence instrumental environmental empowerment. Additionally, the fact that more than two thirds (68%) of respondents will need technical assistance to use the information from the workshop shows that significant instrumental knowledge and skills are still needed. It is plausible that knowledge and skills received through the workshops are significantly less useful – or even devoid of utility – without further technical assistance (among other needed resources). In total, this indicates incomplete instrumental environmental empowerment for participants and, most likely, significantly incomplete instrumental environmental empowerment for the organizations and communities they returned to after the workshops.

The presenters at the workshops displayed significant instrumental environmental empowerment, communicating relevant facts and skills to participants. AILC workers had relevant legal training and significant experience conveying legal information in

workshop settings. The NMED workers displayed significant knowledge of permitting procedures and technical details during the workshops. The tribal presenters displayed vital local knowledge of applying environmental EJ and technical knowledge to issues within their communities. With all of this motivation to convey useful information and evident instrumental environmental empowerment in play, why isn't there significant instrumental environmental empowerment among the participants? It is possible that returning to organizational roles that do not support EE and EJ had an effect. It is also possible that the issues being faced are more complex and lack organizational footholds. It is also possible that the workshop structure did not sufficiently allow for participants to acquire and use knowledge and skills presented by the presenters.

It is evident from the example of Mt. Taylor uranium mining operations, brought up by the NMED tribal liaison and the AILC director, that the transfer of instrumental environmental empowerment to substantive environmental empowerment is important and complex. When speaking about the importance of instrumental knowledge, these planners/presenters specifically noted the importance of this element of the workshops in light of tribal efforts to halt new uranium mining near Mt Taylor – a site of religious and cultural significance for multiple area tribes. The process of petitioning the NM state government to prevent new mining displayed the need for tribes to have a better understanding of environmental permit granting processes. Tribes developed skills and functional approaches to halting the mining far later in the process than ideal. Although the conflict ended with Mt. Taylor being designated a traditional cultural property (TCP), allowing tribes to provide significant input into permits for uranium operations, greater gains may have been possible with better understanding of bureaucratic processes.

Permitting workshops and substantive environmental empowerment. The execution of workshop strategies was successful but indicators of the overall goal show mixed, relatively meager results toward substantive environmental empowerment. The explicit goals and strategies of the workshops were to use education on EJ and the technical elements of environmental permits to increase participation in the permit process. Alone, this would indicate that workshops would provide some meaningful spaces but once participants returned to their organizations, knowledge and motivation would decline. Major substantive outcomes of the workshops were more complex and positive than this result would indicate, since multiple distal outcomes emerged (such as increased networks between agencies). The question remains whether other mechanisms of the workshops and their resultant successes in creating meaningful spaces for participation were implicit or unintentional.

Follow up interviews and questionnaires indicate that although initial intent was strong, diffusion of information did not occur, was generally incomplete, or only happened when a problem arose. This could be due to participants not passing along information, those receiving the information not retaining it, or myriad other issues. This indicates an issue that emerged from field notes as well: Retention of information from the workshops relied heavily on participants taking detailed notes, remembering details, or looking up information on-line. Giving participants comprehensive take-away materials covering information, contacts, etc., from the workshops might have mitigated this issue and added to substantive gains from the workshops. Following up on participants shows that with low retention of workshop information, many of the intended uses for workshop information were never realized.

The workshop planners' and attendees' focus on technical knowledge acted as a *form for space* (explained below). It is clear from interviews and participant observation that the workshops would not have been attended if the technical information on environmental permitting were not offered. Many attendees focused on technical details to a point approaching reverence; need was also expressed by attendees for continued technical assistance. Although the technical focus was clear at the time of the workshops, follow-up interviews revealed that the most important aspects of the workshops were the opportunities to create, maintain, and expand networks within and between organizations – evidencing substantive environmental empowerment and resultant further formal environmental empowerment. Essentially, the technical information created a necessary framework (a *form*) that was filled with space for interaction, connection, and a more authentic engagement with EJ. This move from technical to relational space allows people to work toward EJ instead of being hemmed in by technicalities. The axial diagram depicting this phenomenon (Figure 2, above) shows the evolution from technical focus to substantive relational forms, finally re-cycling as further formal environmental empowerment. This cycle, a subject of growing theory and research in CP, will be discussed at more length in Research Question 3.

In what ways do formal, intrapersonal, and/or instrumental environmental empowerment result from the New Mexico EJ executive order? The original purpose of the NM EJ Executive Order can only be speculated. As executive orders are officially meant to clarify an existing law, the NM EJ Executive Order's official goal was to clarify and expand the role of the NMED and relevant executive agencies in explicitly ensuring environmental safety for all residents. The EJ order has resulted in a variety of

operational changes and diverse tangible outcomes. Due to its complexity, it is difficult to untangle resultant formal, intrapersonal, instrumental, and substantive environmental empowerment, as they are a part of a cycle of bureaucratic, organizational, and community effects. The previous sections on the EJ liaisons and the Permitting 101 workshops could have been included as outcomes of the EJ executive order but had sufficient effects of their own that warranted separate sections. The following descriptions are more strictly direct effects of the EJ order.

The New Mexico EJ executive order and formal environmental empowerment.

Formal environmental empowerment can emerge from straightforward structures, such as organizations, or less overt structures, such as legal opportunities for action. The literature presented previously in this paper on *space* as an opportunity structure for action encompasses these and other modes of formal environmental empowerment. The main explicit results of the EJ executive order that would likely lead to formal environmental empowerment are the establishment of the EJ liaisons and the EJ provisions within each NMED bureau. The following addresses the outcomes of the provisions within the NMED Solid Waste Bureau in particular, as these provisions have sufficient specificity to measure their results. The determination of these outcomes was preceded by significant archival and interview-based information gathering to determine all of the steps involved in using the provisions, as there were no people or places where sufficient information was available to make eligibility determinations. This alone points out problems with the provisions, as no community members can access the information and almost all of the NMED employees queried had incomplete information on using the provisions. Still, there is utility in determining the course a community member or

organization would have to take within the NMED structure; at the least, such information could be disseminated to communities for use. The process of establishing the path of using the provisions and the results of applying those provisions follows.

Determination of use of the Executive Order began with gathering information from participants on the EJ executive order and then using archival analysis to delineate criteria for permit decisions. I then focused specifically on provisions within the Solid Waste Bureau. Then, once criteria were outlined, eligibility and action on cases could be determined based on the criteria. Figure 5 shows the process permit applicants go through to receive a decision from the NMED, created from multiple dialogs with NMED employees.

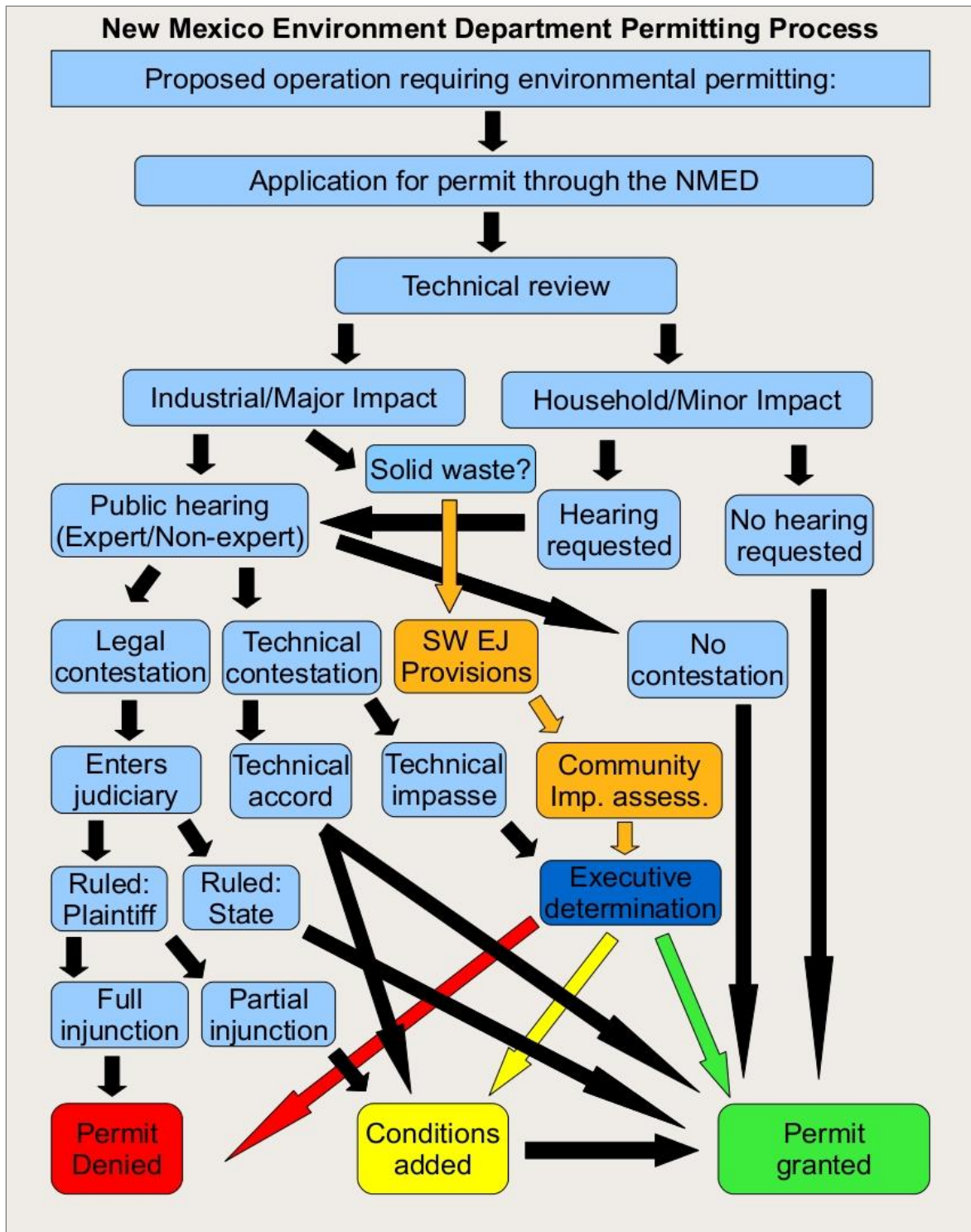


Figure 5: New Mexico Environmental Permitting Process

First, applicants apply for a permit through the NMED. Depending on the bureau and specifics of the operation, it is determined by the NMED bureau whether a public hearing will be necessary (almost always for industrial/commercial operations [e.g., hazardous waste facility], almost never for household operations [e.g., septic tank], unless requested by the community). If the permit is for a new solid waste facility or the expansion of an existing solid waste facility, permit seekers must include necessary information to determine if the site is in a *vulnerable area*, as defined in the NM Solid Waste Code (20.9.3DH, 2007): Within a four-mile radius of the proposed new or expanded facility, there must be at least 3 other eligible regulated facilities, a population of at least 50 people within any square mile of the New Mexico portion of the radius, and a percentage of households at or below 150% of the national poverty level that exceeds the state average within any square mile of the New Mexico portion of the radius. Additionally, the site must not have previously been zoned as an industrial site in a process that included a quasi-judicial public hearing (See figure 6 for the eligibility process and criticisms of the criteria).

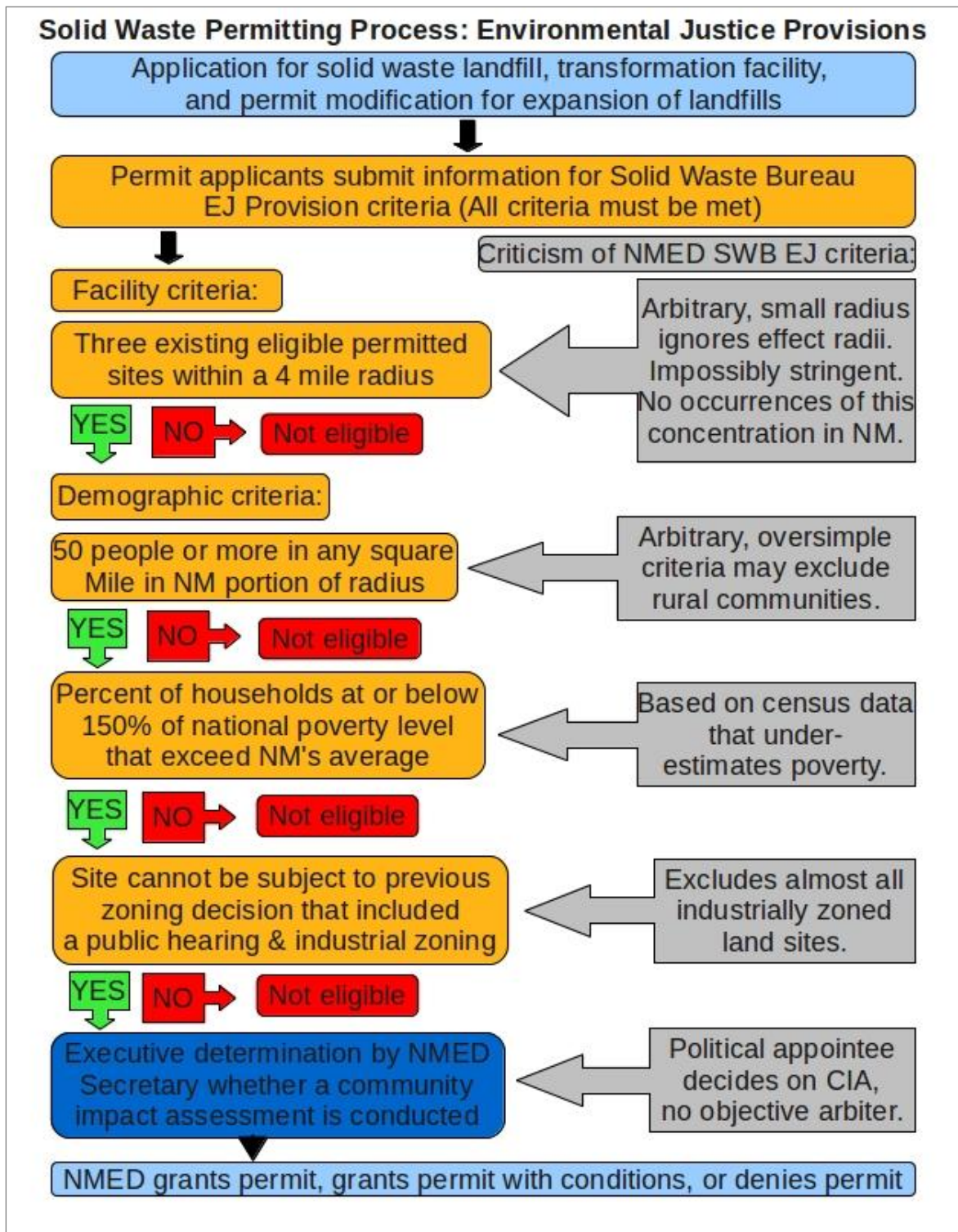


Figure 6: Solid Waste Permitting Process: Environmental Justice Provisions

Following the hearing, there is generally a period for comment before the NMED makes a determination. Although rare, permit applications may be contested in court to either fully bar the operation or add conditions to the permit. Additionally, communities, organizations, or members of the public may contest the technical determinations by the NMED. If the NMED finds merit in the technical contestation, they generally add conditions to the permit to reach an accord with the public. If an accord cannot be reached, the secretary of the appropriate NMED bureau (acting on behalf of the executive) resolves the technical impasse. In the end, the NMED determines whether permits are granted, granted with conditions, or denied. Decisions can be appealed, but most permits are either granted or granted with conditions.

The level of complexity of the environmental permit granting process is already formidable without adding in the EJ provisions. The fact that almost all NMED workers had severely limited knowledge of how the EJ provisions are applied and whether they ever had been used is a testament to how they are overburdened with technicalities. All but one NMED worker interviewed assumed that the EJ provisions for solid waste were functional. The only worker who knew of the provision's dysfunction evaded admitting its limitations until asked directly. The worker spoke of many other effects of the EJ Executive Order without mention of the fact that not a single case of the technical provisions use had surfaced. When one NMED employee was presented with the complexity and inconsistency in the permitting process related to the EJ provisions, they stated, "I see...I guess no one has ever used them then. I'm not sure how they would." Such a process cannot yield the explicitly stated goals of actual use (meaningful participation in permitting processes). Essentially, NMED employees cannot fulfill

aspects of their job related to the EJ executive order because the provisions are too complicated and details are unavailable. Extreme bureaucratic maneuvering has derailed the EJ directives. This directly provides evidence of formal environmental disempowerment, as NMED employees, organizations, and community members not only lack opportunities to pursue EE and EJ, but are also presented with an incomplete and ineffectual process that may divert their efforts into futility.

Visually representing the procedural permitting steps reinforced what one high-level state worker stated: the environmental permitting process favors granting permits and even when conditions are added, they are often for environmental monitoring, rather than substantive modifications to the applicants' plans. Flow from initial application toward granting is only interrupted by successful legal contestation that aims to bar completely the operation or executive decisions based on narrow criteria for EJ – likely only in highly publicized and politicized circumstances (No examples of this happening are recorded to date). Multiple high-level NMED workers stated that there is a severe lack of use for the overt formal environmental empowerment opportunities (lack of citizen opportunities for participation).

Participants from university and state government that were aware of the EJ executive order asserted that of all bureaus beholden to the EJ Executive Order, the Solid Waste Bureau was unique in creating measurable, specific procedures for reducing environmental injustice. This specificity is partially due to the nature of solid waste as a source of pollution, versus airborne, waterborne, and radioactive pollution; solid waste is easier to contain, track, measure, etc. than any other form of waste (barring solid waste cross-polluting air or water). There was consensus among all but one participant – a high-

level state worker interviewed after primary data collection – that the Solid Waste Bureau's EJ provisions were essentially functional, except that the general public did not know how to access the benefits of the provisions. Figure 6 (above) shows the process for meeting eligibility criteria under the provisions that would result in a community impact assessment and an executive decision about the ruling on the permit.

The Solid Waste Bureau's EJ provisions did not directly result from the EJ Executive Order, but from an indirect judicial process. As outlined previously, Fisher (2009) describes the legal contestation of a permit for an expansion of a waste site by Rhino Environmental Services near the Chaparral Colonia that resulted in the NMED being forced to adhere to the spirit of their requirement for public input. The case prompted the Solid Waste Bureau to draft specific EJ provisions based on the criteria cited by legal opponents that described the vulnerable status of Chaparral. In the end, the criteria are significantly less stringent. Still, the criteria set forth by the Solid Waste Bureau are the most obviously actionable of any bureau's EJ provisions. This also reveals the lack of formal environmental empowerment resulting from the EJ order, as legal action was necessary to cement these provisions, as overly stringent as they are.

In order to determine how many opportunities have existed since the inception of the EJ provisions, each criterion can be used to filter the total cases. The first criterion used is geographic proximity to permitted sites. In order to determine proximity, all permitted sites were mapped using a geographic information system (GIS). Although only the sites permitted since the 2007 addition of solid waste EJ criteria would grant a more stringent picture of opportunities, starting with all sites shows not only those permits, but high concentrations of existing permits that could feasibly result in future use

of the EJ provisions. Figure 7 shows a map of New Mexico with tribal lands, *colonias* (rural settlements close to the border of Mexico), all NMED permitted sites, and nuclear engineering and testing sites.

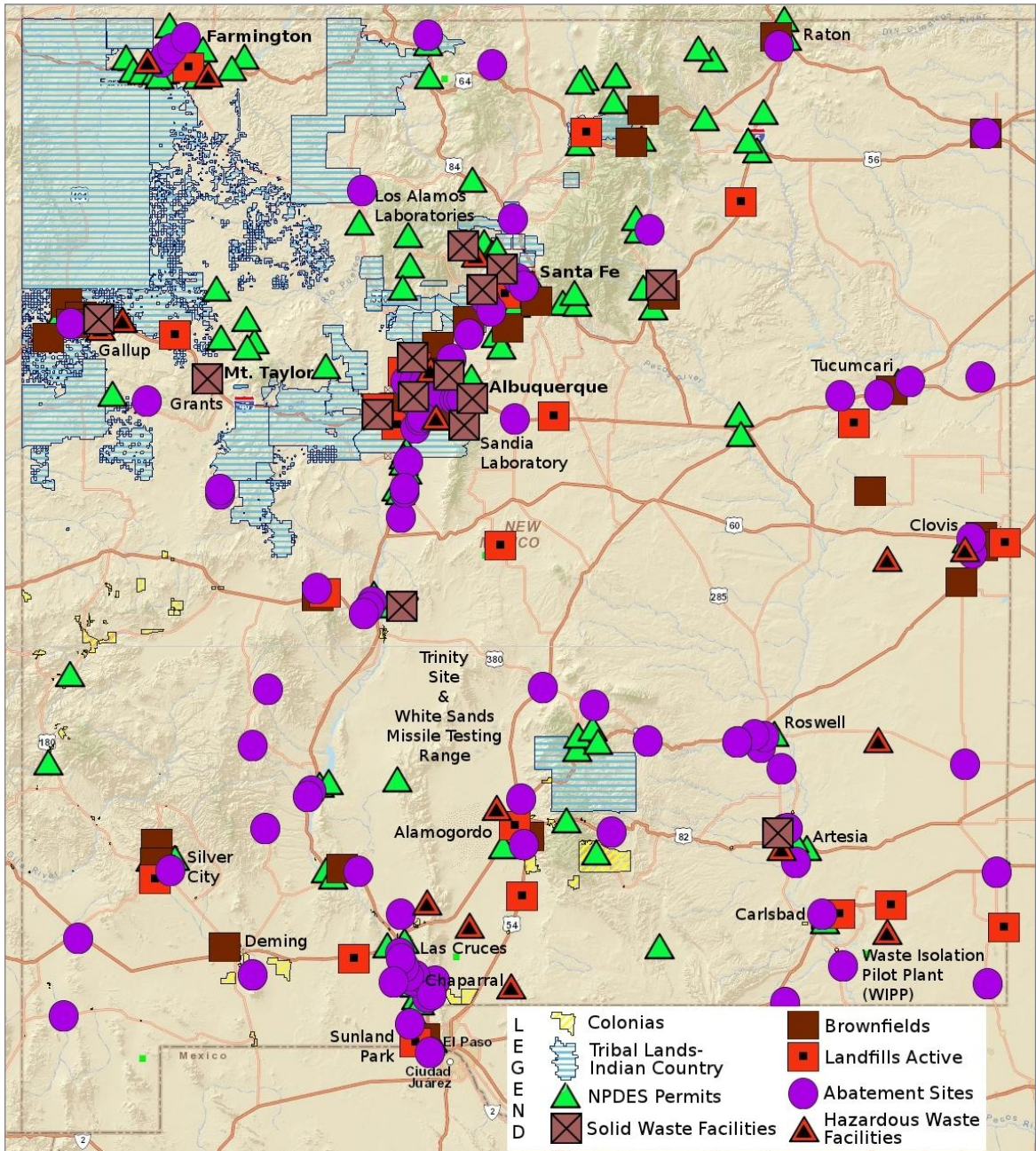


Figure 7: New Mexico Map: Environmental Permits, Tribal Lands, Colonias, and Nuclear Sites

Initial scanning shows several areas where multiple permitted sites are adjacent to tribal land and colonias that could be at risk for environmental injustice. Additionally, the checkerboard of jurisdiction (especially apparent in the northwestern quadrant of the state) creates many issues for determining applicability of any EJ provisions, since tribal land is under federal EPA jurisdiction and/or tribal environmental agency jurisdiction. The fact that not all sources of pollution count in the NMED provisions can water down their power to initiate community impact assessments.

Once eligible sites are marked with radii of four miles, spatial analysis shows that no permit cases meet the criteria for concentration of eligible permitted facilities and only one area in the entire state is at risk for meeting criteria if another solid waste site were proposed. This area is situated along the southern border of New Mexico and spans between the Sunland Park community and the Chaparral community, both just north of El Paso, TX. Figure 8 shows eligible permitted facilities with red radii and potentially eligible sites with yellow radii (NPDES permit sites, voluntary remediation sites, and brownfields could result in permit decisions that make them eligible under the SW EJ provisions. Abatement sites are unlikely to be eligible but are included to show the scope of environmental risks). The Chaparral community was the site of the initial proposed solid waste facility that eventually resulted in the creation of solid waste EJ provisions and, of particular interest, does not qualify for mobilization of EJ provisions as they are currently articulated. If the radii were increased to 10 miles – as recommended by the court at the time of the initial case – the Chaparral colonia would potentially be protected from future new or expanded solid waste sites (See Figure 9).

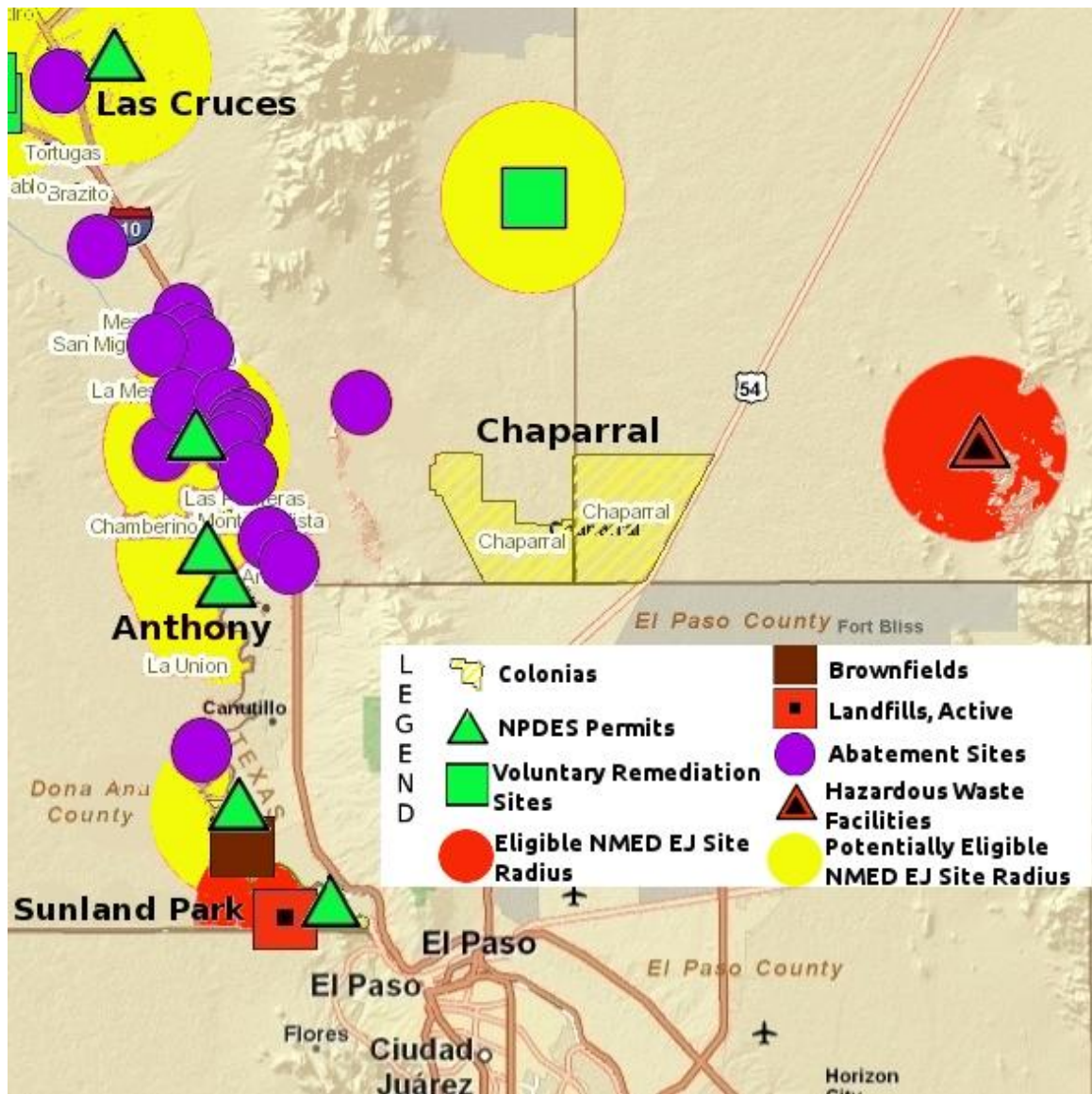


Figure 8: Chaparral Colonia Map: 4-mile radii

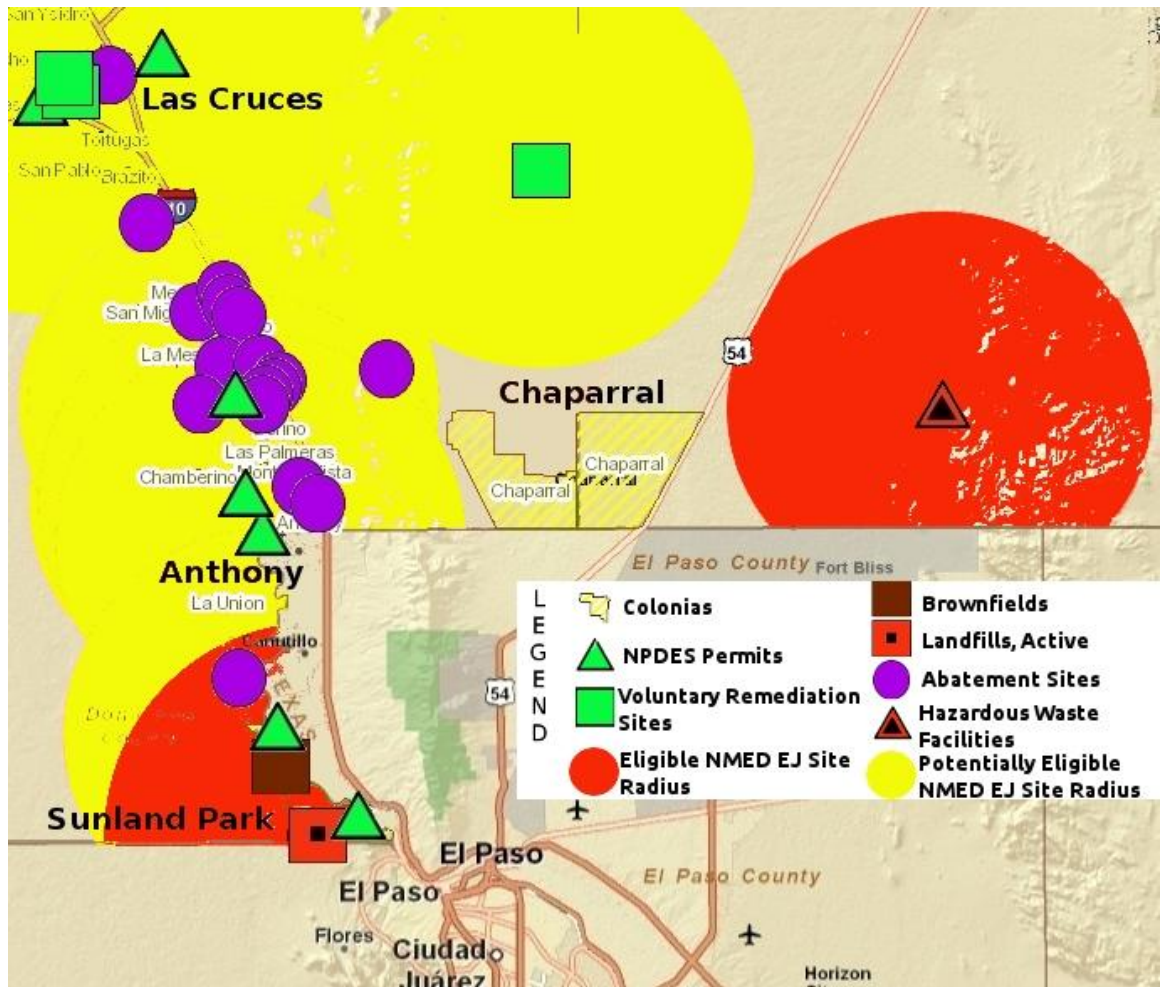


Figure 9: Chaparral Colonia Map: 10-mile radii

There are no sites that currently meet the criteria for concentration of eligible permitted facilities. In addition, almost no communities are at risk for meeting the criteria. Once the other stringent criteria for gaining a community impact assessment are applied, it is extremely improbable that any community will be eligible in the foreseeable future. Since the community impact assessment does not necessarily result in any changes to the permit, the overwhelming likelihood is that the Solid Waste Bureau

provisions have no direct use. As the solid waste provisions have not been broadcasted to communities and organizations, they also serve little or no political purpose.

I interviewed several high-level NMED employees to clarify the role of the EJ provisions in the Solid Waste Bureau and the NMED. They confirmed that the Solid Waste Bureau's EJ provisions had never been used and are unlikely to challenge any solid waste permit. Not only is the process long and indirect, unknown to almost all stakeholders, and exceedingly stringent, but the NMED and the Solid Waste Bureau are shifting focus to other means of promoting EJ. Technical procedures for preventing environmental injustice are essentially ineffective when compared to education and creating spaces for dialogue between permit seekers, communities, and the NMED. One high-level NMED worker stated that recent public meetings where efforts to build trust between the NMED and communities have occurred do more for EJ than any technical provision has or can. Another high-level worker stated bluntly that, “magic bullets don't work,” while another critiqued technical prevention strategies, stating that, “The usual way for a problem to be discovered is accidentally, not because the State has a good monitoring system – because they don't.” The NMED does not have the resources to measure radii of effects from polluting industries, long-term migration of pollutants, or old sources of pollution that predate contemporary permits (e.g., arsenic used as a pesticide by farmers and ranchers). The permit process is geared for expediency over stringency – a position supported by analysis of the environmental permit process outlined previously. All told, explicit structures created by the NMED Solid Waste Bureau to increase meaningful participation by community members through crafting permit provisions were unsuccessful in promoting formal environmental empowerment.

The New Mexico EJ executive order and intrapersonal environmental

empowerment. The explicit goals of the EJ executive order, as expressed in the NMED Solid Waste Bureau's EJ provisions, resulted in intrapersonal environmental disempowerment – or, at least, misplaced efficacy. The implicit or unintentional results of the EJ order resulted in increased intrapersonal environmental empowerment, as NMED workers used the existence of the EJ order to creatively integrate EJ and opportunities for meaningful participation into their work. This perceived directive gave some NMED employees confidence and permission to foster formal and substantive environmental empowerment for communities.

All but one of the interviewed NMED employees felt that the EJ provisions gave them power to pursue EJ in their work. One high-level NMED worker stated that, “We are here to help them, and assist them, and give them some ideas for best management practices...” Another high-level NMED worker and workshop presenter stated that policies reinforcing EJ and collaboration between tribal states and state government have led to positive outcomes:

[After these policies]...it has always been our philosophy...in this bureau to try to foster it [collaboration], to try to work with the tribes on a state-to-state basis. There are sometimes tensions...I think sometimes we agree to disagree but we always agree to talk...the feedback we get is always helpful to us to get a better understanding of what their concerns are...they're our neighbors. We work with them as much as we can.

Although collaboration between tribes and NMED bureaus varies in quality and quantity, Representatives from all NMED bureaus that participated expressed, at least, motivation and basic examples of collaboration, while some NMED workers expressed significant motivation and experience with tribal collaboration. Such motivation and efficacy add to intrapersonal environmental empowerment resulting from the EJ executive order.

The New Mexico EJ executive order and instrumental environmental

empowerment. As previously described, NMED employees' incomplete knowledge of EJ provisions and permit processes indicates a grim picture for instrumental results of the EJ order. This is complicated by the general lack of consciousness about the incomplete knowledge and/or its importance. As NMED employees are the gatekeepers for permitting knowledge for community members and organizations, it is important that they are knowledgeable about the strengths and limitations of NMED policies (and their own knowledge about these policies). Fortunately, the instrumental abilities of NMED employees extend beyond the application of EJ provisions.

Many NMED workers had established creative ways of integrating some level of EJ participation into their daily work. Additionally, all of the interviewed high-level NMED workers took pride in their work that resulted in increased EJ for New Mexicans. All showed great initiative in creatively constructing spaces for dialogue and informal interactions that potentiate EJ and meaningful participation for stakeholders. Such spaces include voluntary hearings before the formal application process where applicants discuss their proposals directly with community members and organizations. They also include collaborative training sessions on environmental permitting processes and EJ – including the sessions in this project and similar sessions with other communities. Additional examples of these spaces include technical support for communities so they can engage with NMED and permit seekers on technical elements of operations, translation and dissemination of permit proposals across multiple media beyond state requirements, and memoranda of understanding with tribal environmental agencies. One worker stated that some of these methods are controversial but beneficial for everyone involved. In the end,

the conversation has been more helpful and created more space for promoting EJ than the regulations. These results also show a clear connection between instrumental environmental empowerment among NMED workers and resultant substantive environmental empowerment.

The New Mexico EJ executive order and substantive environmental empowerment. The EJ executive order resulted in many outcomes with varied results; some substantive results created spaces for formal environmental empowerment while others were essentially disempowering. Due to its higher scalar level of operation, each primary tangible result has both proximal and distal results, some of which have already been explored in depth. The first tangible outcome of the NM EJ order included the incorporation of provisions to increase meaningful participation by all NM peoples (explicitly those thought to be currently less included in participation, e.g., low SES, minorities, immigrants, and tribal peoples). Additionally, the NMED created two Environmental Justice Liaisons who are responsible for working with tribal communities and colonias. The EJ order also encouraged formal environmental empowerment through capacity building and cooperation with other (including tribal) organizations and intrapersonal environmental empowerment by granting permission for NMED workers to act on justice-based values. Sustained workshops and public hearings have also taken place across the state acting to disseminate knowledge while creating and maintaining network connections. In concert with these efforts, other programs (e.g., state grant monies for tribal recycling programs and clean-up efforts) have compounded the effectiveness of such formal opportunities.

The explicit formal environmental empowerment mechanisms resulting from the EJ executive order did not function as overtly stated but contributed to a culture of participation that created opportunities for participation necessary for formal and substantive environmental empowerment. The overall lack of successful formal environmental empowerment created by explicit elements of the EJ order appears to indicate that it has not created any significant spaces for meaningful participation by (or in) the NMED. Although not explicit in the EJ order, the EJ provisions resulted in a significant culture of participation as substantive environmental empowerment. This indicates the likely creation of resultant formal environmental empowerment as the organization and employees provide further opportunities for community participation. This refers to the acceptance and promotion of meaningful participation within the NMED, from community members, and other organizations.

Interviews and archival analysis revealed numerous indicators of the Solid Waste Bureau's culture of participation. Although existing environmental permit processes in the Solid Waste Bureau only require minimal notice for communities (30 days), the Solid Waste Bureau now suggests giving communities significantly more notice. For communities that are more likely to be experiencing environmental injustices (sometimes referred to as vulnerable communities) and/or communities that lack relevant technical sophistication, the Solid Waste Bureau suggests as much as two years notice before the official public hearing takes place. Within this period, the Solid Waste Bureau has collaborated with permit seekers to hold multiple earlier public hearings, collaborated with communities to increase technical knowledge of the permits and proposed operations, and disseminated permit information in more languages using more local

media than required by Solid Waste Bureau policy. These changes are linked with pride in promoting greater participation and voice by marginalized peoples. During interviews, NMED employees displayed excitement about increased EJ and public participation that results in EJ. Interviewees displayed eagerness to identify with this aspect of the Solid Waste Bureau's mission, even though it may translate into more work. This link between all forms of empowerment displays the necessity of seeing EE as an integrated construct.

Several participants stated that they embraced and fostered a culture of participation toward EJ because it was more congruent with the values that propelled them to seek employment in the NMED than most other work they performed in their positions. For them, the Executive Order and its resultant missions for NMED bureaus were license to act more authentically in their work life. Two employees also noted that although extra hearings and notices may seem like more work, they prevented significant conflicts between communities, permit seeking operations, and the NMED. As far as results of the research at hand, there is significant support that the EJ order as operationalized in the NMED Solid Waste Bureau has created and continues to create meaningful spaces for participation toward EJ – albeit not through core explicit means. This indicates strong but diffuse substantive environmental empowerment that clearly feeds back into the greater cycle of environmental empowerment.

Research Question 3: The Cycle of Empowerment

The third resultant research question is: In what ways do the elements of substantive empowerment/tangible results resulting from the NM EJ executive order create a cycle of environmental empowerment? This question is based on Rich et al.'s (1995) assertion that formal, intrapersonal, instrumental, and substantive empowerment

feed back into the greater cycle of empowerment.

Throughout the results on the components of EE for the EJ liaisons, the permitting workshops, and the EJ executive order, the connections between the components and their relationships to each other have emerged – even when abstracted for examination. One of the most important questions that can be answered from these relationships is whether substantive environmental empowerment (resulting from formal, intrapersonal, and instrumental environmental empowerment) leads to further formal, intrapersonal, and/or instrumental environmental empowerment – thus leading to a cycle of empowerment. As outlined previously, there is empirical evidence that supports and detracts from the concept of empowerment as a cycle.

One of the best examples of the cycle of empowerment were the repeated informative workshops held by the AILC. Since – if at all like the permitting workshops – each set of workshops relied so heavily on networks, collaboration, shared resources, and the good faith of tribal governments and organizations, their existence rested upon many layers of past empowerment. The AILC executed multiple annual trainings that were held in high regard by employees and stakeholders who were common recipients of the training. The planning relied on intrapersonal and instrumental empowerment within a supportive context of formal empowerment. Much like annual meetings or conferences, stakeholders and trainers – whose demarcations were sometimes blurred – saw these recurring trainings not only as education but also as an opportunity to create and reinforce network connections while maintaining a space to engage in the important work of maintaining tribal rights and sovereignty. One workshop presenter stated that the connections made were not only important for relaying information but created

opportunities for further action and were also, “professionally rewarding,” potentially increasing intrapersonal and instrumental empowerment. Thus, beyond the direct substantive empowerment evidenced in repeated advocacy efforts for tribal communities, further opportunities for formal networks were created and reinforced.

On the surface, the permitting workshops could be seen as only educational opportunities with the potential for diffusion of information and innovation from attendees to their respective organizations and communities. This would not include the substantive structural change necessary for sustained community empowerment. If this were the only reality, the effects of the workshops would be somewhat meager. As with other trainings by the AILC, other significant results later emerged that outweighed the more explicit purposes of the workshops. The permitting workshops created spaces for participation by attendees, who then used the opportunity for engaging with session leaders and workshop coordinators. Especially during the first workshop, following clarifying questions on technical details, attendees spent significant time engaging NMED personnel on their relationships with tribal peoples and lands. These questions often challenged the session leaders to reflect on state-tribal relations and think beyond the minutia of environmental permits. These interactions created or reinforced important networks that support formal environmental empowerment while increasing the instrumental knowledge and environmental empowerment of the presenters. All NMED workers reported that they regularly engage in some form of outreach and/or collaboration with tribal communities, colonias, or other potentially “vulnerable” communities, feeding this instrumental environmental empowerment back into their regular work.

The entire process of operationalizing and executing the EJ executive order displays a cycle of empowerment. Archival analysis of NMED documents and qualitative analysis of interviews revealed that both major tangible outcomes of the Executive Order (EJ provisions within the NMED and the establishment of the EJ liaisons) faced complex challenges in their operationalization. For bureaus following the Executive Order, the challenge was that each had jurisdiction over significantly different types of pollution; industries polluting air must be monitored with vastly different standards, equipment, and means of oversight than industries storing solid waste. Each NMED bureau was given the independent task of developing their own parameters for following the EJ order and each has significantly different operational demands. This has resulted in provisions that reflect cultural differences between the bureaus and differing methods of measuring pollution and proximity to vulnerable populations. All bureaus have included additional opportunities for participation in permit hearings – allowing the public to comment on the potential effects of any permitted operation, building, etc. The Solid Waste Bureau has created the most opportunities – likely due to the relative ease with which solid waste can be monitored. Solid waste is far easier to map geographically, contain, and conceptualize. The Solid Waste Bureau created provisions (described previously) that allow for greater weight for the voices of people with a low socioeconomic status and ethnic minorities while creating further opportunities for hearings and comments by the public. These provisions are so stringent that they alone have not provided space for marginalized peoples to seek EJ. Throughout this process, a culture of participation and EJ promotion has emerged, with resultant formal environmental empowerment. Due to this culture of participation, The NMED – in cooperation with multiple communities and organizations

– has held multiple forums, information sessions, and hearings that increase intrapersonal and instrumental environmental empowerment for stakeholders.

CHAPTER VI

Discussion

This section relates empirical findings from the results section to literature, policy, and methodology. First, I present the most important impact on theory, research, and action. Then, I present the impact of the remaining results. The discussion is organized parallel to the structure of the results section, relating each major finding to theory and previous research from literature and implications for policy and action. Then I highlight implications for research methodology, followed by the strengths and limitations of the research project.

The Environmental Empowerment Model

Environmental empowerment, as a technical term, has not been articulated completely or accurately. It is evident from the use of Rich et al. (1995), this research, and other works, that empowerment within environmental contexts is useful and important – especially in the face of growing results of global climate change. Thus, defining and articulating EE is a worthy addition to empowerment and CP literature. By adapting the synthesized notions of empowerment from Rappaport and Zimmerman (1984) and Nelson and Prilleltensky, (2005), I define environmental empowerment as: A multi-level process by which individuals, organizations, and communities consciously gain mastery and control over environmental decisions affecting their community through sustainable power shifts, authentic voice, and democratic participation. This includes the

elements of empowerment traditionally included in CP theory and directly included in Rich et al.'s (1995) model.

The most important result of this research is the support for Rich et al. (1995) and the further articulation beyond their model of empowerment in reaction to environmental issues. The results indicate the presence, importance, and interconnectedness of formal, intrapersonal, instrumental, and substantive empowerment in the context of environmental issues. This research also supports revisions to Rich et al.'s (1995) model: the original model seemed to place a temporal order from formal to intrapersonal to instrumental to substantive empowerment (see Figure 1), while the process of this action research showed a clear interconnectedness of formal, intrapersonal, and instrumental empowerment in creating substantive empowerment without temporal constraints. Formal environmental empowerment is directly related to isomorphism (the tendency for organizations to take on the forms of others within a similar context, even at the expense of their original goals). Another addition to the visual model is the inclusion of further detail regarding the nature of the relationship between the two main sectors of organizations making up formal EE. The most functional relationship is a partnership, but the reality of organizational relationships often falls somewhere on a continuum. There are also situations in which formal EE can and must be achieved in an adversarial context, such as when governments or corporations have significantly more power than grassroots organizations and little incentive to cooperate. Formal EE also seems to form a supportive basis for other forms of empowerment and acts as a repository for tangible outcomes from previous empowering processes. This interconnected process of environmental empowerment is illustrated in Figure 10.

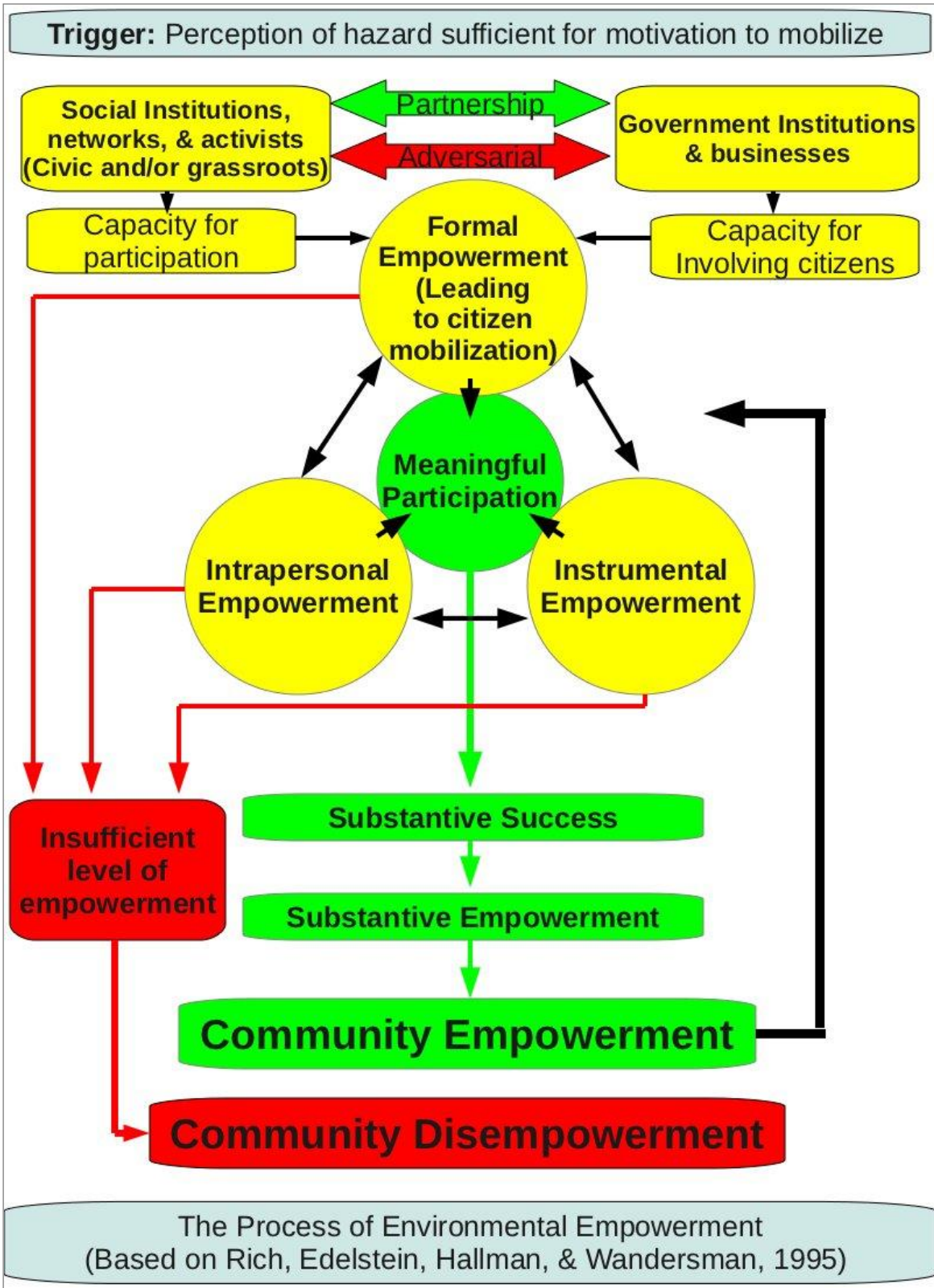


Figure 10: The Process of Environmental Empowerment

This action research project illustrates EE as a process and a greater cycle of empowerment. Formal environmental empowerment emerged from the work of AILC and other grassroots community organizations to create capacities for participation among citizens. It also emerged from the NMED's work to involve citizens in meaningful decision-making. By forming a partnership, formal empowerment led to citizen mobilization and further formalized opportunities for citizen participation.

This project also showed the complexity of empowerment in real-world contexts. During this project, there were never pure examples of empowering and disempowering processes. The EJ executive order had empowering effects by creating the EJ liaison positions (among other positive effects) but also led to NMED articulating procedures for permitting that were, at times, misleading and useless as they were intended. Additionally, the EJ liaison positions are flexible enough that each NM State administration can shape them to their own political ideology through restructuring of chain of command (e.g., moving the Liaisons so that they no longer directly report to the NMED Secretary), renaming the position (e.g., omitting EJ from the new title), and filling the positions with personnel that are less inclined to work toward EE. The workshops' best outcomes were either implicit or unintended; the outcomes most supportive of EE were not overtly part of the workshops. Additionally, the long-term effects of educating tribal workers about NMED codes could be disempowering by creating isomorphism leading to tribal environmental codes missing important contextual elements. Overall, every aspect of the legislation, workshops, and other action by the NMED had positive and negative effects on EE. The most important lesson is to facilitate

the best parts of each process and inhibit the unnecessary or detrimental elements in order to promote EE.

Intrapersonal environmental empowerment resulted from explicit, implicit, and unintentional effects in the NMED from the EJ executive order. These effects allowed the EJ liaisons, high-level workers, and workshop presenters from the NMED to pursue EE and EJ with the confidence that they were acting within the confines of their job descriptions and to further NMED goals. Additionally, AILC workers exercised intrapersonal environmental empowerment in the planning and execution of the workshops. Together, all collaborators pursued EE and EJ with confidence that they were capable and permitted to do so.

All collaborators also expressed instrumental environmental empowerment through the planning and execution of the permitting workshops. NMED presenters displayed technical knowledge that served two importance purposes: On one level, it was instrumental by directly educating participants on permitting process details; on another level, it provided the form for important network growth among participants and presenters. Both were instrumental in achieving substantive results. AILC workers and presenters used their professional legal training to inform participants of legal issues related to pursuing EJ and as a means of establishing their authority to present EJ as an important aspect of the workshops.

All three of these interconnected forms of environmental empowerment resulted in substantive environmental empowerment. Transfer of instrumental knowledge, creation of memoranda of understanding, further workshops, and, most importantly, new and strengthened network connections between the NMED, the AILC, tribes, and

colonias to further EE and EJ. Additionally, these substantive results directly fed back into the cycle of EE by creating further structural/institutional opportunities for formal environmental empowerment. The experience of planning and executing successful efforts also leads to interpersonal and instrumental empowerment for those involved in the process. This research supports the expressions of each interconnected element of EE, the overall model of EE, and the cycle of EE.

Research Question 1: In what ways is the core stakeholder organization subject to isomorphism?

As stated in the results, the main stakeholder organization (AILC) maintains a balance of isomorphism that promotes best practices without diverting them from their organizational goals. Although the AILC shares certain attributes with similar organizations and must interact professionally with numerous government, academic, nonprofit, and community entities, it seems to be able to choose attributes and relationships that best serve its core mission rather than serving to bolster legitimacy. This lack of isomorphism directly resulted in greater levels of formal EE.

The AILC and isomorphism. The AILC has resisted excessive isomorphic forces by balancing novel demands for legitimacy from tribal organizations, tribal communities, and university with instrumental uses of professionalization (which can be the result of normative isomorphism) and adoption of prevailing organizational structures (which can be the result of mimetic or coercive isomorphism). The organizational history of the AILC reveals greater nuance in their experience of isomorphism than the literature indicates. For the AILC, this means reaping benefits from isomorphism at times and potentially being limited by it at other times. Additionally, the AILC likely facilitated

isomorphism among some tribal participants with insufficient codes established.

The AILC's early years display mimetic isomorphism, as described by DiMaggio and Powell (1983). Due to its unique structure, which eventually became one of its greatest strengths, the AILC had to establish its identity and legitimacy in ways that organizations with more familiar structures would not need. As some of these unique features were part of the context of the organization, they were less subject to pressures described by Meyer and Rowan (1991). The myth and ceremony (mostly symbolic organizational behaviors that serve little practical purpose) that might come from normative isomorphism's conformist professionalization were tempered by strong ties to tribal community needs. Holding to their goals was likely easier when they were parallel with the personal and community values of employees – even though they had been subject to significant pressure to professionally conform in law school. Internal training also held some isomorphism at bay, allowing the AILC to influence the professional goals and methods of employees and other Native American law students. The myth and ceremony from mimetic or coercive isomorphism was avoided, for the most part, by the size and funding structure of the organization. Because of its diverse funding sources, the AILC was never forced to take on the wholesale structure and culture of other organizations. The familiar basic structure of the organization, along with titles for employees, displays a functional level of isomorphism that does not impede organizational function. This emerged regardless of whether the AILC's structure sprung from mimetic or coercive isomorphism.

The AILC likely encouraged mimetic and/or coercive isomorphism among some workshop participants. Participants assimilated technical details of environmental permit

codes successfully, displaying significant appreciation and reverence for the processes presented by the AILC and NMED. This reverence supports Meyer and Rowan's (1991) assertion that bureaucratic norms are myth and ceremony used to increase legitimacy and the appearance of responsibility. Some participants readily engaged in mimetic and/or coercive isomorphism by integrating NMED procedures into their own tribe's environmental procedures. The position titles and organizational names already displayed striking similarity to their NMED and EPA counterparts (e.g., Navajo Nation EPA, Water Quality Technician, Solid Waste Manager, Director of Environmental Protection, etc.), showing a history of isomorphism before the workshops. The tribal participants' eagerness to adapt NMED procedures may expedite the creation of codes to protect their natural resources and save vital organizational resources. There is significant need to establish methods of protecting natural and cultural resources for many New Mexico tribes, making the NMED codes potentially quite valuable. Alternatively, the adoption of NMED codes might lead tribes toward procedures that are further from their original goals, as described by DiMaggio and Powell (1983) and Saidel (2002). The dysfunctional complexity of some NMED codes and procedures (e.g., the NMED Solid Waste Bureau's EJ provisions) could result in gaining legitimacy at the expense of ideological commitments for tribes.

The AILC, isomorphism, and environmental empowerment. The AILC's organizational history, context, and skills facilitated its role in promoting EE. The AILC used its legitimacy to utilize opportunities and resources at higher scalar levels while creating opportunities at the same and lower scalar levels. As EE must exist at multiple levels to be sustainable, the AILC's multi-level approach appears to be effective. The

AILC's masterful use of legitimacy while incurring few obligations to change their organizational behavior led to low levels of isomorphism and high levels of formal EE.

The workshops themselves conveyed information that may constrain or facilitate EE. The information and network connections that emerged from the workshops will interact differently for each organization, depending on their structure and history. Technical codes may be of particular use for tribal organizations experiencing mimetic isomorphism, while it could act coercively to smaller, less established tribal organizations. Additionally, larger and more resourced tribal environmental organizations may have little need for the information to modify their own codes. They may want them to understand the NMED's procedures for current or future interactions. Successful navigation of NMED procedures would be of use to organizations, even if they were resistant to isomorphic forces of the state.

By exerting control over the workshops, workers, tribal participants, and tribal presenters are more able to exert control over environmental decisions without excessive isomorphism. The AILC training workshops serve the dual role of education and network building, adding to their capability to control spaces for decision-making emphasized by Harvey (1997). Legal contestation is adversarial by definition and is a more formal version of contestation described by Rich et al. (1995) but the spaces for engagement in decision-making by the AILC seem far more based on a partnership model – at least for tribal communities. The workshops' structure emphasizes a clear model of partnership with all stakeholders including parties that have traditionally engaged adversarially. The workshops seem to have a ready-made audience due to the AILC's reputation – reinforcing the fact that they have created significant spaces for collaborative discussion

and action. Through the workshops, the AILC has established a more collaborative model for sharing codes, information, and connections with minimal coercive and normative isomorphic pressure. It can be argued that the partnership structure is simply another organizational form that is being advanced by the AILC and other collaborators, but the participatory nature of the planning and execution of the workshops reinforces the likelihood that, isomorphism or not, partnership is a welcome and positive model.

The AILC and organizational legitimacy. The AILC's legitimacy is maintained in a far more dynamic way than appears in DiMaggio and Powell's (1983) vision of organizational ecology. This could be due to exertion of power that critics claim is often missing from organizational ecology (Singh, Tucker, & Meinhard, 1991). Some of the specific goals of the AILC, like advising tribal courts and training Native-American law students, also aid in resisting isomorphism. Since these goals of the organization are necessary operational enabling features rather than organizational missions, their legitimacy and necessity are built in. The AILC maintains some remaining spaces for trainings and workshops in addition to their operational workings for UNM. Over time, the networks the AILC has built by successfully running training workshops have added to their legitimacy and made reacting to isomorphism less of an issue. The lack of overlap of the AILC's goals with other organizations may also help them to resist the need to take on more common structures as they need not compete with other organizations.

Within the workshops, legitimacy was an important consideration. As expected, participants showed low levels of faith in government environmental protection efforts. Their participation in these workshops show, at the least, perceived utility in understanding NMED procedures and connecting with NMED workers. This lack of faith

seemed to partially spring from the differences in framing environmental issues. This is similar to findings by Wandersman and Hallman (1993) and Arquette, Cole, Cook, LaFrance, Peters, Ransom et al. (2002) that tribal peoples and people living near environmental hazards frame and perceive risks differently from government agencies. Participants responded to the legitimacy of technical training readily, within a context of potential distrust of the NMED. The AILC worked to lend legitimacy to the process and tribal leaders added legitimacy through their presence, allowing use of tribal facilities, participation, opening and closing prayers, and resource support.

Policy and action implications. A necessary strength of the core stakeholder organization in its execution of the permitting workshops is its resistance to excessive isomorphic forces and its reliance on collaboration and partnerships. Government agencies and other organizations can shape procedures and trainings so that they demand less isomorphism from partner organizations. Policies can also avoid a contestation model as this inevitably leads to adversarial relationships between stakeholders. The NMED showed significant flexibility in its partnership with the AILC, leading to successful collaboration in the workshops and in related activities after their conclusion. Overall, partnership models like Rich et al. (1995) suggest are supported by this research for promoting the implementation of EJ and other social justice policies.

Research Question 2: EJ Provisions and Environmental Empowerment

The second research question asked how the EJ liaisons, the permitting workshops, and the NMED Solid Waste Bureau's EJ provisions create capacity for formal, intrapersonal, instrumental, and substantive environmental empowerment. Each of these elements of the EJ order can be seen as a distinct space for empowerment and a

part of a larger, integrated space for empowerment. Due to this interconnectivity between these three spaces subsequently described, there is some overlap between them. This further indicates the importance of Research Question 3, wherein the connections between the spaces and the larger process of cycling empowerment is addressed.

EJ liaisons and environmental empowerment. The EJ liaisons are a unique and powerful result of the EJ executive order and its operationalization in the NMED. With potential for expanding the cycle of environmental empowerment through fostering further spaces for EJ, the EJ liaisons are central to the success of the EJ order. As they also simultaneously represent structural positions and individual people, their success in pursuing EJ and EE significantly rests on the specific people that occupy the positions.

EJ Liaisons and formal environmental empowerment. In their position as substantive, tangible results of the EJ order and potential enablers for further EE spaces, the liaisons bridge otherwise separate networks. The people occupying the positions during the time of this research excelled in creating more opportunities for EJ. In this way, the EJ liaisons are an excellent example of Rich et al.'s (1995) partnership model by collaboratively coordinating their work. They also exemplify the government creating the “capacity for involving citizens in decision making” called for in Rich, et al.'s (1995) empowerment model – retained in my EE model as “capacity for involving citizens.” By promoting workshops and hearings to both involve and educate communities affected by environmental issues, the EJ liaisons answer the call of formal environmental empowerment.

EJ Liaisons, intrapersonal, and instrumental environmental empowerment. Results provide evidence that the EJ Liaisons promote intrapersonal and instrumental

environmental empowerment as a regular effect of their work. The opportunities they provide for community members to learn skills, build knowledge, and practice participation indicate greater instrumental knowledge and efficacy toward action. Again, this places them firmly at the forefront of fulfilling functions within both Rich et al.'s (1995) empowerment model and my EE model.

By the very nature of their position, the EJ liaisons stepped outside of the traditional norms of the NMED. The myths and ceremonies of seemingly monolithic organizations like state agencies, well described in Meyer and Rowan (1991), are certainly at work in the NMED. Still, the EJ liaisons defy traditional roles of expert authorities that make all decisions with minimal input from the public. Instead, they are a part of a new culture emerging within the NMED that actively encourages greater citizen participation and transparency in decision-making. This also shows the intrapersonal environmental empowerment of the EJ liaisons themselves, as they have been given space through the NMED's operationalization of the EJ order to pursue these ends.

EJ Liaisons and substantive environmental empowerment. The EJ Liaisons represent and create substantive environmental empowerment. The most important element of this finding to theory rests in the nuance this adds to Rich et al.'s (1995) empowerment model. The boundaries blur between formal structures, substantive results, and stakeholders with power. Although their model seems to cast substantive results as environmental *wins*, social change rarely happens in tidy increments. Some wins are partial, some lead to greater gains over time, some come at the expense of greater losses, and some simply reinforce stakeholders' abilities to create other wins in the future. Thus, in a sense, any gain in empowerment can be seen as a substantive gain if it allows for

further power over future environmental decisions. Such a definition of substantive gain might dilute the power of any empowerment model and create vague cycles of efficacy that never truly change more substantial power structures nor result in changing environmental circumstances. The EJ liaisons clearly rise above these dilutions, as they occupy a sustainable structure with power and create further tangible spaces for EE. The EJ liaisons and their actions make it clear that substantive gains need not only take the form of changed government or corporate environmental decisions to result in substantive environmental empowerment. Alternatively, substantive results of environmental empowerment processes must be sustainable and produce significant and sustained effects to result in substantive environmental empowerment.

Permitting workshops and environmental empowerment. The permitting workshops were the action component of this action research process and represent the most achievable and generalizable intervention for other contexts. Continued workshops and educational hearings in New Mexico following these workshops for tribal communities are evidence of their relative utility. This generalizability runs the risk of promoting an intervention that, with a lack of tailoring to local contexts, could become an exercise in futility. Because of this risk, it is important to understand which elements of the workshops directly promote EE and EJ.

Permitting workshops and formal environmental empowerment. The permitting workshops resulted in formal environmental empowerment that was mostly either unintentional or implicit. Explicit goals of the workshops had meager results and were generally lacking in resultant formal environmental empowerment. Still, both explicit and implicit results intersect with existing literature.

The collaborative nature of the workshops allowed reciprocal relationships to form or strengthen, resulting in networks that can form the basis for formal environmental empowerment. This move toward collaboration stands in contrast to Marger (2005) noting tribal distrust of policy and the unstable and competitive environment found by Wallerstein (1999) in New Mexico. As this research took place a decade after Wallerstein's (1999) participatory evaluation, it is possible that the climate for collaborative action in New Mexico has changed or that the different focus of the project had an effect.

The collaboration and inclusion of tribal perspectives in the workshops had a major impact on collaboration. This specifically acted against the general lack of voice and power in environmental decisions shown by McLeod, Switkes, and Hayes (1983), Marger (2005), and others. The NMED presence in the workshops is likely influenced by the EJ Executive Order stating the necessity of tribal inclusion. The Environmental Protection Agency also has the goal of increase civic collaboration in its work (Sirianni, 2009), which is partially a result of Clinton's 1994 EJ Executive Order. In both cases, bureaucratic agencies are showing their strengths by following directives. The willingness of tribal representatives to participate in collaboration with the NMED also shows the trend of greater tribal concern about health effects of pollution and action toward environmental policy compliance documented by Arquette, Cole, Cook, LaFrance, Peters, Ransom et al. (2002). Considering the history of distrust and lack of collaboration between government and tribal entities in the Southwest, this type of collaboration is an important element of a larger shift toward citizen participation and inclusion of tribal voice in environmental decision-making. Together, these shifts

evidence movement toward formal environmental empowerment by government institutions and social institutions included in both Rich et al's (1995) model and my elaborated EE model.

The opportunities in the workshops for tribal participants to network with technical experts was a starting point for the development of professional networks necessary for more permanent spaces for action and use of knowledge. Unfortunately, the role of government workers does not officially include consultation with tribal environmental agencies and organizations. This does not bar collaboration or interaction when jurisdiction is shared or difficult to determine. This limits the ability of NMED workers to provide needed technical support but shows promise for building relationships under certain circumstances and less formal connections during future trainings or similar opportunities. This research partially supports the determination by Rich et al. (1995) that most opportunities for citizen participation are adversarial in nature. If no networks develop beyond those needed for professional interactions for the determination of jurisdiction and contestation of permit granting processes, future opportunities will likely be adversarial. If networks for knowledge dissemination and collaboration grow to function more as they did in the context of the workshops, opportunities for partnership – as suggested by Rich et al. (1995) – would likely emerge. Results of this research indicate solid potential for continued partnerships that contribute to formal environmental empowerment and the greater cycle of environmental empowerment.

Permitting workshops, intrapersonal, and instrumental environmental empowerment. As stated in the results, the workshops created intrapersonal environmental empowerment by increasing participant knowledge with information that

they perceived to be useful in their work. Additionally, results evidence indications of instrumental environmental empowerment among workshop participants and presence of instrumental environmental empowerment for workshop presenters. This likely increased efficacy to act on the knowledge, resulting in intrapersonal environmental empowerment. The most important part of this process for understanding empowerment theory and Rich et al.'s (1995) model is that intrapersonal and instrumental environmental empowerment are so closely tied together, yet not necessarily directionally causal. The social construction of knowledge in the workshops meant that many people from varied backgrounds both taught and learned. Thus, regardless of the expertise and motivation for action that they brought with them to the workshop, their instrumental knowledge increased. This knowledge, in many cases, led participants and presenters to act further on existing and new knowledge – thus increasing their intrapersonal environmental empowerment. This interaction supports the revisions to Rich et al.'s (1995) model to make intrapersonal and instrumental environmental empowerment parallel processes rather than temporally or causally bound. It seems an oversimplification to assume one must come before the other. Instead, it seems clear that they interact together with structural/organizational factors, potentially ending in formal, intrapersonal, and instrumental environmental empowerment together.

Longer-term retention of technical knowledge was generally low. Some aspects of workshop information were more readily retained, such as understanding of environmental risks and the application of technical information to specific tribal environmental hazards. In addition to emphasizing the difficulties with establishing long-term opportunities for meaningful participation, the heavily selective retention of

knowledge indicates a fractured space for environmental discourse as documented by Taylor (2009). Each space has its own mode of production (Harvey, 1997), making different methods of navigation necessary. This would make it very difficult to use workshop information across contexts without further technical and resource support and would likely affect retention of knowledge. This fracturing makes it difficult to achieve the critical mass necessary to navigate State power structures or earn legitimacy without bowing to coercive isomorphism. This indicates that seeking instrumental environmental empowerment alone may not yield sustainable results, as opposed to its interaction with other forms of environmental empowerment described previously.

Permitting workshops and substantive environmental empowerment. Findings evidence that the workshops had mixed results, even though the execution of workshop goals was essentially successful. Explicit goals showed meager long-term successes while unintentional or implicit distal results were more successful. The creation of spaces for network strengthening and expansion both acted as substantive environmental empowerment and fed back into the greater cycle of EE.

The many contexts in which workshop participants attempt environmental action are either under State control or have been heavily influenced by it, supporting Lefebvre's (1992) and Harvey's (1997) assertion that spaces for action are dominated by the State. As decisions about space are central to control and power (Harvey, 1997), the lack of tribal input into these spaces is of vital importance. Workshop information alone is woefully insufficient to change these spaces. Networks of knowledge and support are necessary for tribes to take advantage of any knowledge of EJ policies – no matter how well conveyed. The creation of proximal space accomplished by the workshops was

necessary but not sufficient to make policy information into a useful tool. The creation of distal spaces (e.g., standing committees and regular opportunities for participation) are also necessary for the continued usefulness of the EJ policy information.

The low use and dissemination of knowledge from the workshops was not only evident considering lack of networks and workload issues, but when considering the domination of spaces by the State. The amount of control over language, meeting structure, content of communications, and determination of policies supports the positions of Lefebvre (1992) and Harvey (1997) that the State dominates public spaces for decision-making. This also supports Mitchell's (1997) concept of annihilation *of space by law*; even though participants had high intent and permission to share and use workshop information, they lacked the space to do so. This essentially moved their efforts outside of the official spaces for environmental decisions. The NMED still contributed useful resources and opportunities to improve environmental conditions for New Mexico citizens. Efforts by the EJ Liaisons and other NMED workers continue to create some distal spaces with the influence of the State. In the end, the workshops were successful in certain ways but need strengthening of distal spaces.

The workshops created an enabling space for the creation, maintenance, and expansion of networks within and between organizations. The eager and fruitful collaboration in the workshops between organizations and agencies across sectors represents a good example of a partnership model, as espoused in Rich et al. (1995). Follow-up evidence shows continued collaborations (e.g., subsequent workshops and memoranda of understanding) that solidify the partnerships, expand the loci of control (Harvey, 1997) to make environmental decisions, and elevate local environmental

struggles up scalar levels into negotiations between coalitions and NM state agencies (Harvey's [1997] systematic generalization). The tangible positive relationships noted by NMED workers between tribal agencies, colonia community members, and tribal communities increase voice and trust that Marger (2005) and McLeod, Switkes, and Hayes (1983) state are in jeopardy. Whether these outcomes were implicitly planned or unintentional can only be speculated. Regardless, such results are positive and add to theory on creating substantive environmental empowerment and spaces for further formal environmental empowerment.

Policy and action implications. Policies and agency procedures can improve their outcomes by conducting informational workshops, with some caveats. Workshops should be collaborative in planning and execution to enhance the relevance and quality of content while promoting their legitimacy. The most prominent implications for creating workshops are the need for collaboration, the need for explicit yet limited technical focus, and follow-ups built into the design. The collaborative planning and execution of the workshops effectively modeled necessary uses of network relationships. Including an explicit technical focus seems necessary to recruit participants and retain legitimacy of the intervention, but resource allocation should not exceed that necessary to achieve these goals. Still, for educational purposes and to create forms for the workshop spaces, technical knowledge is a necessary part of the workshop content.

The addition of further explicit goals and support for implicit and unintentional outcomes might avoid excessive resources spent on pursuing technical strategies and aid in fostering positive relational outcomes. Further provisions in policies to guide agencies may also help avoid excessive reliance on technical proliferation. Remaining resources

should be devoted to fostering network growth and providing participants with opportunities to reconnect with other participants and workshop facilitators. Future workshops that retain successful conveyance of EJ policy information and culturally appropriate perspectives would reduce the lack of knowledge/power documented in tribal communities by McLeod, Switkes, and Hayes (1983) and Marger (2005) – essentially reducing the voicelessness of tribes in environmental decisions.

The NMED Solid Waste Bureau EJ provisions and environmental empowerment. The provisions set forth by the NMED Solid Waste Bureau seem to be the most concrete and long-lasting effects of the NM EJ order. The actual utility of the provisions reveals that, although they are more tangible than other effects, the explicit goals of the Solid Waste Bureau provisions are almost impossible to fulfill. The overt nature of the provisions and almost complete lack of direct utility makes them potentially disempowering; people and communities have invested effort into using them, based on the erroneous assumption that they are functional. Fortunately, the Solid Waste Bureau provisions have had other effects beyond the explicit goals.

The NMED Solid Waste Bureau EJ provisions and formal environmental empowerment. Findings show that the Solid Waste Bureau's EJ provisions are extremely unlikely to challenge or change the content of any solid waste permit. In addition, the processes a person, organization, or community would have to go through to use the provisions is unadvertised, indirect, and excessively stringent. Luckily, the NMED and the Solid Waste Bureau have shifted to other strategies for promoting EJ that result in EE. These strategies are less overtly spaces for participation resulting in formal environmental empowerment but still have potential to create positive gains.

There have been no opportunities for the use of the NM EJ order as operationalized by the Solid Waste Bureau. Due to the complexity of the EJ provisions, NMED employees cannot use them as explicitly intended – preventing them from accomplishing part of their job. EJ provisions are partially derailed by their bureaucratic intricacies, displaying the overuse of institutional myth and fetishizing (Made to act symbolically rather than having use or utility) of technical codes and procedures like that documented by Meyer and Rowan (1991). Similar to Sidel's (2002) description of nonprofit organizations, the formal structure of the NMED has lost almost all ideological focus on environmental protection. This dislodges the NMED from its position as the stable center of space (posited by Lefebvre, 1992) for environmental decision-making. This lack of focus at the structural level is, to some degree, balanced by the efforts of workers within the NMED who promote EJ through methods that are more indirect.

The State dominates spaces for environmental decision-making at the expense of some forms of organizational legitimacy, as will be explained below. Explicit goals of environmental protection are not well served by fetishizing technical procedures. This entails reverence for technical details higher than their earned usefulness. Implicit goals of dominating spaces for environmental decisions (Harvey, 1997) through shibboleth (divisive technical language) and technical arcanery (unnecessary and mysterious use of technical procedures) are well served. This makes *business as usual* into behavior based on faith and symbol, rather than best practices toward organizational goals. Although these proprietary knowledges grant a certain legitimacy by making NMED workers into technical clerics, they lose legitimacy if they are barred from protecting the environment effectively (thus missing their explicit ideological focus). Employees who focus on

overly technical codes and provisions, rather than relational solutions, likely strike barriers to environmental protection dead on. This domination of space for environmental decisions acts as Mitchell's (1997) *annihilation of space* by removing the legal space for vulnerable communities to pursue outcomes that are more just. The environmental permit process has had the appearance of including citizen participation before the EJ Executive Order by adding conditions to permits before granting them. As these conditions that are added to permits are rarely substantive, they act as a *moderate space* similar to Bartley's (2007) description in the nonprofit sector. The tokenistic inclusion of minor provisions on permits competes with more radical response to environmental injustice. Technical fetishizing and shibboleth make citizen participation almost impossible and ties workers' hands so they are almost incapable of following their ideological mission of environmental protection if they only pursue it through the explicit methods in the EJ provisions.

The prevailing rules of NMED's overt mode of production seem to be that citizen participation and EJ are important for their image but impractical to formally operationalize. Initial mapping of environmental hazards with government permits shows proximity with tribal lands and minorities living in poverty supporting research by Hird and Reese (1998) and Bullard, Mohai, Saha, and Wright (2007). The striking result of the mapping is that no permit cases meet spatial criteria, underscoring Lefebvre's (1992) assertion that spaces for decisions are not neutral and are dominated by the prevailing mode of production. The convoluted and dysfunctional process for determining vulnerability effectively fulfills both of these rules. This is also an example of Mitchell's (1997) *annihilation of space by law*, as there is no legal space in the EJ provisions for

communities to be categorized as *vulnerable* nor given the resultant extra opportunities for participation. Even the spaces for participation that have been carved out through other channels under the EJ Executive Order are controlled by the State or its employees, making them tenuous acts of *depowerment* (Giving or lending power to aid in the empowerment of others) that could be revoked at any point.

The NMED Solid Waste Bureau's EJ provisions show that there is no single technical solution for promoting EJ, or, as one high-level NMED worker observed, “magic bullets don't work.” Such blanket technical strategies create toxic uncertainty and undermine usable spaces for participation in environmental decisions. Since empirical support for environmental racism is almost nonexistent, it is logical to turn to Weinberg's (1998) assertion that industries pollute because they are allowed to do so. The needless complexity and dysfunctional nature of the NMED's environmental permit procedures clearly allows such pollution. Resistance to this pollution is left in the hands of organizations, communities, and NMED employees willing to pursue EJ outside of formally operationalized provisions. These make up the fractured space opposing the more monolithic power of the State. These avant-garde employees have shown great ingenuity in creating alternative spaces for discussion and action but, in the end, must reconcile their roles of agent of the State and depowering promoter of EE. Overtly, these roles seem irreconcilable, leaving the alternative spaces under a coercive State control. The less-overt reality is more complex, wherein these employees are part of the State's more progressive and publicly engaged elements.

Overall, the operationalization of the EJ Executive Order in the NMED bureaus was uncoordinated and, in the case of the explicit aims of the Solid Waste Bureau

provisions, dysfunctional. The Solid Waste Bureau used technical terms and processes as shibboleth in its provisions, allowing them to retain power over the few spaces for participation while excluding citizens (as described by Meyer and Rowan, 1997 and Harvey, 1997). Efforts by NMED employees resulted in other efforts to promote EJ that may provide greater gains for communities facing environmental issues in the long term.

The NMED Solid Waste Bureau EJ provisions, intrapersonal, and instrumental environmental empowerment. The explicit goals of the NMED Solid Waste Bureau's EJ provisions resulted in intrapersonal environmental disempowerment while the implicit or unintentional results increased intrapersonal environmental empowerment. Instrumental environmental empowerment was overtly low due to NMED employees' lack of knowledge of provisions and incomplete knowledge of permit processes related to EJ. Intrapersonal environmental disempowerment occurred when workers or community members erroneously felt that the Solid Waste Bureau provisions provided spaces for meaningful participation. Intrapersonal environmental empowerment occurred when NMED workers used the existence of the EJ order to integrate EJ and opportunities for meaningful participation into their work.

A form of *Toxic uncertainty* (Auyero & Swistun, 2008) results from the near consensus that the Solid Waste Bureau's EJ provisions are functional. Beyond the uncertainty created by the EJ provisions themselves, the belief by NMED workers that these provisions are functional adds misplaced credence to determinations of communities as not *vulnerable* (not at risk). For communities that anecdotally or intuitively know that they are at-risk, technical determination to the contrary is reinforced by workers' earnest support for the determining process. The consensus acceptance of the

provisions also reinforces the NMED as a stable and neutral space (as posited by Lefebvre, 1992) while providing a moderate space that diffuses the power of real efforts to increase participation and EJ (as posited by Bartley, 2007).

Intrapersonal environmental empowerment within the NMED is related to its legitimacy as an organization that engages in environmental protection. Higher legitimacy allows workers to engage confidently in their work and increases the likelihood that communities will accept their authority. The NMED has lost legitimacy through increasing the complexity of its codes for communities and mimicking higher scalar organizations (The U.S. EPA) as a subject of coercive isomorphism (as explained by DiMaggio & Powell, 1983). Contextually invalid codes for solid waste disposal have created a lack of faith in the Solid Waste Bureau and caused significant illegal dumping, including *transboundary* waste dumping onto tribal land (akin to the phenomena described by Pellow, 2007). The real and perceived loss of legitimacy has caused some NMED workers to identify with EJ and work to increase participation. This *reverse isomorphism* recreates avenues of participation for citizens found in tribal and community organizations, resulting in further formal EE. Although this instrumental environmental disempowerment resulted in less legitimacy, worker ingenuity for creating spaces has balanced losses in intrapersonal environmental empowerment.

The NMED Solid Waste Bureau EJ provisions and substantive environmental empowerment. The EJ executive order, once operationalized in the NMED Solid Waste Bureau, had varied substantive results. Some substantive results created spaces for formal environmental empowerment while others were essentially disempowering. The explicit formal mechanisms in the Solid Waste Bureau provisions did not create substantive

environmental empowerment but contributed to a culture of participation that continues to create opportunities for participation necessary for formal and substantive environmental empowerment.

The technical provisions that resulted from the EJ Executive Order created a form for the spaces for change. The results of the technical provisions represent technical fetishizing as described by Meyer and Rowan (1991) and did not directly create spaces for citizen participation. They indirectly created opportunities by displaying an explicit EJ mission resulting in NMED workers creating actual spaces. This can be seen as creating a form similar to frameworks for liberatory content described by Bookchin (1986), wherein structures can facilitate and give structure without necessarily dictating content. Bookchin (1986) asserts that we must attend to fostering liberatory content for these *forms of freedom* or they can easily contain totalitarian or oppressive content. The EJ Liaisons created and maintained liberatory spaces for citizen participation and acted as bridges between the EJ Executive Order and tangible EJ gains. These gains expanded the multiple loci of control described by Harvey (1997). More indirectly, attendees who expanded the scope and quality of their networks made the greatest gains in producing spaces for change. Overall, opportunities for citizen participation in environmental decisions remain, at best, a choice of whether to ratify decisions made by the State and industries.

The technical provisions, reverse isomorphism, and opportunities for values-based action by NMED employees toward citizen participation have resulted in increased spaces for participation (essentially, formal EE). This seems to evidence a new culture in the agency and may also reflect larger societal shifts toward citizen participation or

necessary adjustments to the bureaucracy to maintain legitimacy. This shift toward a new culture of participation indicates a new mode of production for the NMED. Lefebvre's (1992) description of spaces for modes of production states that such a shift would result in real potential for change, including arenas for pursuing a more just means of environmental protection. One test of the authenticity of spaces for change is whether any of the spaces are outside of the direct influence of the State – specifically, organizations which are not sufficiently subject to the State's isomorphic influences. The workshops for tribal communities and the subsequent workshops for colonia communities displayed sufficient collaboration in their planning, structure, timing, content, and participation that they moved outside of the State's sphere of control. The State still had influence over important aspects of the workshops but no more control than any other stakeholder did. This means that the workshops were authentic spaces for change and constitute substantive environmental empowerment.

The fractured approaches to pursuing EJ within the NMED add further nuance to Rich et al.'s (1995) empowerment model and my EE model. There is no dichotomous determination as to whether government agencies create or foster capacities for citizen participation. Instead, one might ask if there is a preponderance of support for capacity building and in what contexts it is more likely to create formal environmental empowerment. Additionally, intrapersonal and instrumental environmental empowerment vary significantly within agencies, even if they retain a monolithic appearance.

Policy and action implications. Results indicate that almost all opportunities for participation in environmental decisions are dominated by the State. This means that government policies are an essential part of creating spaces for EJ. Collaborations

between tribal, state, and federal agencies must work to increase participation while avoiding excessive isomorphism, since government agencies have departed significantly from their ideological goal of environmental protection. Policies might be more effective if they built in directives for consultation with tribal agencies and communities, thus formalizing these collaborative connections and making them an accepted part of government workloads.

The EJ Executive Order has been successful in some circumstance but not in others. Overall, it seems to have increased participation and voice in environmental decision-making by marginalized peoples – albeit in an indirect way. The increases in trust and collaboration are noteworthy outcomes of the policy. It is difficult to determine whether Clinton's (1994) Executive Order directly resulted in Richardson's (2005) which directly resulted in positive outcomes in New Mexico tribal communities. Such a direct line would indicate the effectiveness of federal executive orders, but a cause and effect relationship cannot be determined. It certainly seems that both federal and state executive orders had direct and indirect positive results worth pursuing in other contexts.

Policies must be flexible enough to function across diverse contexts instead of the current rigid, complex procedures that mostly function to reproduce technical fetishizing. In order for environmental agencies and their workers to engage effectively in environmental protection, policies and procedures must be less arbitrary and technical. Such a shift might rebuild the legitimacy the NMED and similar agencies have lost with communities and advocacy organizations. In addition, operationalizations of EJ procedures must contain *actual* opportunities or citizens will eventually give up on the process. The complete lack of opportunities for participation provided by the NMED

Solid Waste Bureau's does little to bolster the NMED's goals of community inclusion and EJ. Current policies and procedures essentially cast polluters as innocent until proven guilty. This allows industries to pollute and destroy community resources until they are reigned in by state after the fact.

It is imperative that executive orders are constructed and operationalized in a consistent and effective manner. The lack of consistency in the application of the NM EJ order has resulted in very few added opportunities for participation. As previously stated, the technical provisions only indirectly created spaces for participation. The most effective elements of NMED's operationalization of the EJ Executive Order were the creation of the EJ Liaison positions. The workshops were a good start for increasing participation and could, with refinement, foster sustainable opportunities for citizen participation. Intentionally building in collaborative workshops as agency procedure could greatly increase any positive effects found in this research.

Research Question 3: The Cycle of Empowerment

This research adds to our knowledge about the full cycle of empowerment. As the opening section on the Environmental Empowerment Model shows, EE is a cyclical and nuanced process with many intermediate outcomes that can function as substantive environmental empowerment while simultaneously leading to other elements of EE. This means that the larger model of empowerment works in a cycle to promote further empowerment while many sub-processes also lead to smaller cycles of empowerment as they reinforce the necessary elements of the model.

There is empirical evidence that supports and detracts from the concept of empowerment as a cycle. What this research reveals is that there is a threshold where

sufficient substantive results of empowerment processes that create or reinforce formal, intrapersonal, and instrumental environmental empowerment are creating a cycle of empowerment. Insufficient substantive results lead to environmental disempowerment or cycles of sub-processes that have no further substantive results (e.g., continued reinforcement of efficacy or organizational processes that only work to perpetuate themselves).

Implications for Methodology

This participatory action research project has multiple implications for methodology, both for the methods and the content area. The first implication, likely experienced by many other community-based participatory action researchers, is to expect spending significant time, effort, and resources to understand, enter, and work within community networks. Reminiscent of Masco's (2006) work in New Mexico, connecting with community organizations, the stakeholder organization, government workers, university contacts, environmental advocates, and tribal representatives was integral to constructing a meaningful action research effort. The current (and ongoing) action and its measurement are most certainly part of a long, involved, and collaborative process, rather than bearing much resemblance to my initial assumptions. The more connections I made and the more people I interacted with, the more complex and authentic the work became. This would have not been the case had I simply brought in a research model and executed it.

One of the most important features of this research is meaningful participation. It was extremely important to model the participation that stakeholders wish to see in policy contexts. This meant intersectoral collaboration with significant sensitivity to everyone's

views, needs, and capacities. At many times, I realized how fortuitous and improbable the mixture of stakeholders in this project was. The AILC and NMED were far more able, transparent, and cooperative than I have ever experienced or heard of in organizational work. Even considering these improbabilities, it was still a balancing act. I do not expect to find such a lucky combination of organizations in other contexts and neither should anyone else. Building in meaningful participation is likely the most important and hardest part of an action research project.

One of the most detrimental factors for the research process was my lack of knowledge about tribal government and its fast turnover. Not only did entire regimes change over every year, but keeping up with previous administrators was extremely difficult. Even though I spent years trying to embed myself in these organizations and communities, I remained, as expected, an outsider. The quick changeover and my position as an outsider means that, in hindsight, I needed to design follow ups that functioned with tribal government schedules. Such intricacies are difficult to foresee, but CBPAR practitioners should never assume that organizations, governments, communities, or people will have a similar frame of reference to them, be it time or some other element of their world-view. Although I navigated some elements of this cross-cultural reality sufficiently, some blind spots affected the research. And, as one of my mentors used to say, “Every interaction is a cross-cultural interaction” (Frank Harrell, personal communication).

A saving grace amid such detrimental issues is the use of robust mixed methods to triangulate findings. My initial research plan was far more involved and would produce far more data than a single dissertation could hold. This allowed some methods to fall by

the wayside as they became impractical or were undercut by contextual difficulties (as described previously). As analysis of qualitative data takes significantly more time than gathering the data, it is an excellent initial method and fallback position. In addition to these advantages, qualitative methods, especially inductive methodologies like grounded theory, allow for significant reconnaissance and exploration. Fully deductive evaluation and similar research methods will only confirm or disconfirm initial assumptions, potentially missing important elements of the research context. In the end, the qualitative data from this action research were significantly more meaningful and useful than the quantitative data that were meant to take center stage. This shift would not have been possible without a solid mixed-method design.

Using a GIS was not only useful for determining eligibility for the NMED Solid Waste Bureau provisions, but became a tool for critically assessing the provisions themselves. As use of GIS tools proliferates, it is important to see beyond their direct and explicit uses. Any technical method is essentially neutral and can be used to either support the status quo or challenge it. This research supports the utility of the latter.

SNA is another methodology that can be elevated to great technical ends. Such uses hold great potential for community-based research. Alternatively, using basic network tools on a smaller scale or with more qualitative measures also has the potential to add unique knowledge to action research projects. Whether participatory SNA, massive quantitative SNA, or small-scale pedagogical network visualizations, this method is a boon to community-based research.

Strengths and Limitations

Strengths. The main strength of this research springs from its participatory action research orientation. By including participation across sectors, communities, and cultures, the action was significantly more valid and successful. Additionally, by using participatory methods of measurement, the core stakeholder organization is far more able to conduct research and evaluation without needing an outside collaborator. The biggest advantage of action research is that intervention is integrated into the project. This allows better conjunction of measurement with target indicators and allows collaborators to be a part of creating positive change.

The collaborative nature of this action research and the people involved in promoting EJ were inspiring. Multiple sectors, cultures, organizations, and communities came together to create spaces for better environmental health in communities. The enduring connections are a testament to the project's successful collaborations. This success belongs to the many people and communities involved in the workshops; I was only one of many collaborators who contributed knowledge, skills, and labor to the action element of the project.

Another strength of this research is that it follows policy to resultant concrete efforts in communities. It also links abstract theory (e.g., empowerment and production of space) to measurable phenomena (e.g., actual new opportunities for citizen participation). It also uses multiple, triangulated methods to generate results. Combined with the long-term follow-up, the research was able to capture outcomes that could not have been measured cross-sectionally or with a single method design.

Limitations. The main limitation of this research, endemic to PAR approaches, is the lack of control relative to more constrained designs. As almost all of the power to design the project was held by the stakeholders, timing, content, and methods of measurement could not be optimized for rigor. This also translated into a drop in reliability between workshops and non-ideal items on instruments and protocols. These weaknesses are partially balanced by the many advantages of stakeholder participation.

Another limitation of this research stems from the high rate of mortality between Time 1 and Time 2 that resulted in dropping quantitative comparisons between times. I went to great lengths to track down participants for the follow-up round of data collection (e.g., personally calling over 70 people) but the high rate of turnover in tribal government, from year to year and due to funding cuts, made a quantitative comparison impractical. An additional limitation of this research is the lack of community members as participants in the action component, the planning and execution of the research, and the research sample. This resulted in no direct measurement of outcomes among community members. As the scope of this research process was already multi-scalar and multi-sectoral, it was beyond available resources to increase community member participation significantly. Although not ideal, I included indirect measures of citizen participation. This limitation warrants further research to determine outcomes of the EJ Executive Order among community members in tribal communities and colonias.

CHAPTER VII

Conclusion

Environmental justice at the local level is linked to long-standing traditions of social injustice across many peoples, spaces, and locations. We now face increased chances of environmental catastrophe that may dwarf the already unmanageable levels of environmental degradation. This is especially disturbing, since we seem unable to deal with current environmental issues in a just or sustainable manner. To move toward readiness for this potential onslaught, we must pursue environmental empowerment to rectify current and past environmental burdens placed on vulnerable communities.

Tribal communities have carried many environmental burdens for the benefit of other communities, national security interests, and corporations. Policies are finally reflecting this reality and making efforts to rectify and prevent such injustices. Unfortunately, there are major gaps between the words of EJ policies and the lived reality of its intended effects.

The New Mexico Environmental Justice Executive Order resulted in complex, indirect effects that have increased meaningful spaces for participation by marginalized communities and resulted in environmental empowerment. The workshops for tribal peoples created significant proximal spaces for participation and collaboration and some distal spaces. Further emphasis on standing opportunities for participation (formal environmental empowerment) to follow-up such trainings would likely increase their

usefulness. More focus on increasing and maintaining professional networks would enhance the most powerful outcomes of the workshops. It is clear that the State still dominates most spaces for environmental decision-making. Cultural shifts seen in the NMED, devoted and dynamic organizations like the AILC, and collaborative opportunities like the permitting workshops will shift power and control to the communities most affected by the decisions (environmental empowerment).

Future research and action can focus on the process of environmental empowerment in diverse contexts. In addition, follow-up research can focus on community impact of spaces for participation by measuring the experiences of community members and organizations involved in environmental decisions and catalyzing their involvement. Follow up on cultural shifts toward participation within the NMED and other environmental agencies would clarify results of this research. Additional research on the role of technicalities in creating spaces for networks and collaborations would aid in understanding mechanisms of the production of space for participation. Systematic social network analysis of organizations continuing to act on the EJ Executive Order would add to knowledge of which network types, densities characteristics, figures, and linkages significantly influence outcomes and how they do so. Action should target enhancing and measuring formal, intrapersonal, instrumental, and substantive environmental empowerment – as well as the larger cycle of empowerment in the EE model. Action can also focus on the creation and maintenance of professional networks for organizations working toward EJ and the creation of long-term structures and standing efforts to continue engagement by participants beyond the contexts of workshops.

Collaboration is key in EJ and EE efforts. No single person or organization can counter the actions of governments and corporations that damage community environments. Instead, we must work together and keep learning to shift from environmental injustice to environmental empowerment. A high-level NMED worker earnestly made this point: “We've just got to keep talking...we've just got to keep working together...keep gaining from the experience...”

This project has demonstrated how community psychologists can add unique skills and knowledge to collaborations that increase EJ while CP theories like empowerment add significantly to understanding EJ processes. This means that beyond acting as activists stepping outside of scholarly roles, community psychologists can make real and necessary environmental change to uphold our professional commitment to social justice. Paths already laid by the EJ movement, liberation ecology, and others can help us focus existing skills and concerns toward EE and sustainability without placing the burden of change on peoples and communities who remain underrepresented in change efforts. Environmental empowerment holds the promise of focusing community psychology efforts on promoting environmental justice and sustaining the communities we already serve.

APPENDIX A

A Training for Tribal Communities: Understanding the New Mexico Solid Waste Permitting Process Evaluation

Thank you for attending this event. We appreciate your time and effort and hope that this workshop has provided you with valuable information. Please take a few minutes to let us know how we are doing and help us improve upcoming sessions. Please fill in the best answer for each question and provide any additional comments if you wish. Please use additional sheets if necessary.

1. What is your role or job in tribal environmental issues?

2. Why did you decide to attend this training? (Please circle all that apply)
Required for job Colleague Request Interest/concern Curiosity Other (please specify):

3. What resources will you need to use the information from this training? (Please circle all that apply)
Technical assistance Money Leadership support Relationships Other (please specify):

4. With whom will you share the information from this training? (Please circle all that apply)
Leaders Coworkers Employees Community Members Other Other (please specify):
Organizations

5. Who are you going to build relationships with (in addition to existing relationships) to use this information? (Please circle all that apply)
Government Tribal Policymakers Tribal Other Other (please specify):
Workers Leadership Community Communities
Members

6. How are you planning to use the information you received in this workshop?

7. What was the most useful part of this workshop?

8. What was the least useful part of this workshop?

9. What changes to the format of this workshop do you suggest to make it more successful?

Please mark the best answer for each section of the presentation listed.		Section 1: AILC & NMED on Environmental Justice				Section 2: Tribal Perspective			Section 3: State Agencies on Permitting			
		Strongly Agree	Agree	Neutral/Undecided	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral/Undecided	Disagree	Strongly Disagree	
10.	This section of the training was presented effectively.											
11.	I learned new information in this training.											
12.	I fully understand the information that was presented in this training.											
13.	This training is relevant to the work I currently do.											
14.	The information in this training is something I will use in my work.											
15.	I, my organization, or my tribal community is facing an issue right now where this information is useful.											
16.	Additional comments on the presentation sections:											

17. **How can we contact you to follow up on this workshop and your comments in this evaluation (phone number, email address, etc.)?**
18. Do you have any additional comments on environmental issues, permitting, the training, or something else?
19. Did you attend the previous workshop on **water permitting**? Yes No

Thank you very much for your time!

APPENDIX B

Evaluation Follow-Up

Thank you for participating in the New Mexico Permitting 101 Workshop Series. This follow-up evaluation questionnaire will help us with our grant obligations that supported these workshops and will help us to do similar training in the future. Please take the time to fill out all questions. We appreciate your time and effort and hope that these workshops and panels have provided you with valuable information. Please fill in the best answer for each question and provide any additional comments if you wish.

1. What is your role or job in tribal environmental issues?

2. Would you participate in future sessions on tribal environmental issues?
3. Have you attempted to acquire resources to use the information from the workshops and/or panel?
4. If yes, which types of resources? (Please choose all that apply)
Technical assistance Money Leadership support Community Support Other (please specify):

5. With whom have you shared the information from workshops and/or panel? (Please choose all that apply)
Leaders Coworkers Employees Community Members Other Organizations Other (please specify):

6. With whom have you built relationships with (in addition to existing relationships) to use information from the workshops and/or panels? (Please choose all that apply)
Government Workers Tribal Leadership Policymakers Tribal Community Members Other Communities Other (please specify):

7. How have you used the information/training you received in the workshops and/or panel?

8. Are you currently facing an environmental issue in your community?
Are you using information or connections from one of the workshops to help resolve this situation?
Do you currently have needs that were not met by the workshop? If so, please describe them:

9. In retrospect, what was the most useful part of the workshops and/or panel?

10. In retrospect, what was the least useful part of the workshops and/or panel?

11. Do you have any additional comments on environmental issues, permitting, environmental justice training, or something else?

12. Did you attend the first workshop on **Water Permitting**?

- 13 Did you attend the second workshop on ***Solid Waste Permitting***?
- 14 Did you attend the third workshop on ***Air Quality Permitting***?
- 15 Did you attend the final panel on ***Tribal Environmental Justice*** at the Transitions Conference?
- 16 Can you briefly describe, in your own words, what ***environmental justice*** means?
- 17 Do you believe that current policies allow you to effectively address environmental issues?
Please explain:
- 18 What barriers do your organization face in doing work to protect your community's environmental health?
- 19 What things facilitate your organization face in doing work to protect your community's environmental health?
- 20 Did the environmental training workshops provide an effective space to learn how to use the environmental justice policies?
- 21 What do you see as the greatest environmental risks that you and your community have faced in the ***past***?

- 22 What do you see as the greatest environmental risks that you and your community are facing ***now***?

- 23 What do you see as the greatest environmental risks that you and your community will face in the ***future***?

Thank you very much for your time!

APPENDIX C

Focus Group/Interview Protocol

First, let's go around the table and state your name and your position and organization.
How did you become involved in the environmental training sessions?
How did the process of planning and participating in these workshops change your perception of environmental policy in New Mexico?
How did it change your perception of environmental issues on New Mexico?
In your community?
How do you characterize your rights if your community was facing an environmental dispute?
In your work on this project, what barriers have you faced in planning, supporting, and participating in the workshops?
Has your organization been supportive?
Has Tribal leadership been supportive?
Has your community been supportive?
If you receive any, Where do you get your funding from to work on such a project?
What kind of training or education do you have?
What things have facilitated planning, implementing, and participating in the workshops?
What other type of organizations or specific organizations does your own organization look like?
Which orgs/org types have similar goals?
Which orgs/org types have similar structures?
Government?
Non-Profit?
Academic?
Legal?
What organization would you want it to look less like?
During the workshop planning, do you feel that your voice was being heard?
During the actual workshop, do you feel that you had the opportunity to have your voice heard?
What environmental risks have you and your community faced in the past?
What environmental risks do you and your community face right now?
What environmental risks will you and your community face in the future?

APPENDIX D

Abridged Coding Scheme

Focused Codes (Inductive)

Communication (intersectoral, lack of NMED outreach, between tribal orgs)
EJ order (barriers/facilitators to use, intent to use, past use, resultant policies/procedures/codes, instability of effects)
Environmental decisions (related to policies, ownership as empowerment)
Environmental risks
Fear-based rhetoric
Knowledge (lack, application, transfer/diffusion)
Leadership (organizational, tribal, lack of support, lack of participation, changeover)
Legitimacy/credibility/relevance
Networks (collaborative, intersectoral, professional, reality of connectedness/public)
Participation (informal vs formal, increased levels, barriers/facilitators, opportunities, lack of tribal leadership)
Relationships (adversarial, distrustful, improving, better in nm)
Resources (lack, weighed against environmental concerns)
Technicality (expertise, codes, procedures, sophistication, lack of tribal leaders' interest/focus)
Values/perspectives (congruence with EJ, eco philosophy, tribal vs state)
Vigilance
Workshops (barriers, facilitators, effectiveness)

Grounded Theory Codes (Semi-Inductive)

Class, race, and environment
Collaboration
Creating and exploiting ambiguity
EJ order (effects)
EJ provisions function versus dysfunction
EJ values congruence
Environmental decisions
Explicit versus implicit goals
Legitimacy
Network connections/connectedness
Organizational convergence/similarity (isomorphism)
Participation
Power (struggles for, exertion of, establishment of)
Professional training
Scalar levels of barriers and facilitators
Technicality

Literature-Based Codes (Deductive)

Organizational structure, context, and culture
Integral
Isomorphism (coercive, mimetic, normative)

Monolithic
Myths of institutional contexts vs actual goals of work activities
Nonprofits
Technical Fetishizing
Spaces For Change
Coercive power of the State/Precaiputlation
Community resilience
Community structure
Creation of toxic uncertainty
Destruction of space
Domination of space
Fracturing space
Mental space
Multiple loci of control
Physical space
Production of space
Proximal vs distal spaces
Social space
Systematic Generalization
Temporal perception of risk
The annihilation of space by law
Environmental Justice
Environmental racism
Felt consequences of environmental harm
Voice and control

Appendix E

Social Network Analysis Coding Scheme

Score	Relationship	Description
1	Cursory Relationship	Knows actor and occasionally interacts (more than once per year).
2	Regular professional or personal relationship	Knows actor and regularly interacts (more than once per month).
3	Strong professional or personal relationship	Knows actor, regularly interacts (more than once per month), work together to achieve tasks.
4	Strong professional relationship with regular personal relationship OR Strong personal relationship with regular professional relationship	Knows actor, regularly interacts (more than once per month), work together to achieve tasks, AND regularly interacts outside of the strong relationship.
5	Strong professional and personal relationship	Personally and professionally knows actor, regularly interacts (more than once per month), work together to achieve tasks.

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