

**ENVIRONMENTAL JUSTICE:
COMPARING NEIGHBORHOOD RISKSCAPES
WITHIN HAMILTON COUNTY, OHIO
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ABSTRACT

In this report I discuss my efforts during an internship with the Hamilton County Environmental Priorities Project to enhance awareness of environmental justice concerns Hamilton County, Ohio. I provide a brief introduction to environmental justice, define relevant terms used in this report, and describe the context and scope of my involvement. I present background on the socioeconomic characteristics of neighborhoods within Hamilton County, Ohio and investigate disproportionate environmental impacts in Hamilton County, Ohio by complementing the traditional approach (using toxic release inventory data in conjunction with indicators of poverty and percent persons of color) with views expressed within neighborhoods to contextualize environmental hazards of relevance to residents. Examination of preliminary data suggests that disproportionate environmental impacts occur among neighborhoods within Hamilton County according to both scientifically identified measures of risk and locally constructed knowledge of environmental hazards.

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INTRODUCTION

In recent decades, public concerns have become focused on threats to human health posed by chemicals in the environment (Graham 1996:184; National Research Council 1994:1). More recently, public attention has turned to consider issues of environmental justice, investigating the degree to which some groups of people are threatened more than others through exposure to chemicals and other environmental hazards (Heiman 1996:111; Gottlieb and Fisher 1996:193; Watanabe 1997:1; Stephens 1996:62; U.S. EPA 1993:2.1-5).

The growing concern regarding environmental justice examines socially patterned risk exposures that disproportionately affect groups such as minorities, low-income groups, women, children, among others (Shanklin 1997:335). Considerations of environmental justice include the fair treatment and meaningful involvement of all people, regardless of race, gender, ethnicity, color, culture, income, religion, national origin, or education level with respect to the development, implementation and enforcement of environmental laws, regulations and policies (U.S. EPA 1996:1). As awareness of socially patterned, environmental risk exposures has grown, so has examination of environmental justice increased throughout environmental policy making and program implementation.

In this report, I describe my efforts during a three month internship to assist the Hamilton County Environmental Priorities Project (HCEPP), a community-based, environmental priority setting group, to consider issues of environmental justice within Hamilton County, Ohio. My participation in this internship satisfied partial requirements for M.A. in Applied Anthropology at the University of South Florida. I first describe the context of my participation including information regarding the goals, objectives, and organization of HCEPP. Next, I explain my internship involvement in terms of my roles, activities and approach. From the context of research, I move to discuss the state of environmental justice within Hamilton County, Ohio.

In presenting the findings of this research, I provide background information regarding socioeconomic characteristics (ethnicity, percent persons of color, and poverty status) of neighborhoods within Hamilton County in combination with the location of Toxic Release Inventory (TRI) facilities (the TRI data are widely regarded as a conservative indicator of exposure to dangerous chemicals in the environment). In addition to this traditional scientific approach, I explore environmental justice from the vantage point of residents within neighborhoods to provide a contextualized picture of environmental risk. In discussion I connect anthropological insight to my research approach and then share some lessons that I learned during this internship.

DEFINITION OF TERMS

Several of the terms that I use in this report may not be “general knowledge” or may be understood in various ways; I provide the following definitions to establish a clear understanding of terms used in this report that are relevant to this examination of environmental justice.

- *Environmental Justice* as described above, combines principle of democratic justice with concerns for the environment—including the fair treatment and meaningful involvement of all people, regardless of race, gender, ethnicity, color, culture, income, religion, national origin, or education level with respect to the development, implementation and enforcement of environmental laws, regulations and policies (U.S. EPA 1996:1).
- *Equality of Environmental Impact* is a term is used by HCEPP with the same meaning as environmental justice. This term is preferred by HCEPP because project organizers feel that

“environmental justice sounds like ‘code’,” while equality of environmental impact is more easily understood.

- *Riskscape* is a term that I adopted from geographers Cutter and Solecki (1996) to convey a sense of the “landscape of environmental risk” within neighborhoods specific to each place. This concept combines notions of accepted risks, acceptable risks, and vulnerability to hazards.
- *Quality of Life* is defined within HCEPP as the human enjoyment of recreation, nature’s aesthetic beauty, peace of mind, sense of community identity, and/or cultural resources for current and future generations.
- *Disproportionate Impact* is a relative term describing greater burdens borne by certain social groups more than others.
- *Environment Impacts* are defined broadly by HCEPP to include negative effects upon physical world due to human practice
- *Risk Assessment* is a formal process that entails the evaluation of information on the hazardous properties of substances, determination of the human exposure to them, and characterization of the resulting risk; it is a systematic approach to organizing and analyzing scientific knowledge and information for potentially hazardous activities or for substances that might pose risks under specified conditions (National Research Council 1994:4-5).

CONTEXT OF RESEARCH

Internship Setting

I conducted this research to assist the efforts of HCEPP in appreciating how environmental damage may disproportionately effect population segments within Hamilton County. Impetus for HCEPP came from the Hamilton Environmental Action Commission (HCEAC); HCEAC was created in 1991 by the Director of the Ohio Environmental Protection Agency to address agency and public concern regarding the release of toxic substances into the environment. HCEPP is a two-year project involving citizens and scientists to assess current environmental problems and then prioritize strategies to address those identified concerns. HCEPP declares its purpose in the following way:

...to bring together neighbors, environmentalists, scientists, educators, business and industry leaders, and elected and appointed public officials to work collaboratively to enhance the environment. The Project is designed so that participants can reach agreement on what the community’s most pressing environmental problems are and how to address them. HCEPP will provide a forum for gathering and sorting out the available data about harm being done to air, land, and water resources and for planning strategies to improve environmental quality.

In this first year, the project organized as a non-profit corporation and developed an approach for assessing environmental risks within Hamilton County. The assessment approach divided participants into three working groups to investigate and rank environmental hazards according to various media (air, water, and land); a fourth working group was charged with examining the process of environmental decision making within Hamilton County; and a fifth group, the Consensus Forum, (comprised of delegates from each working group) was formed to consider recommendations from the working groups and make final decisions regarding the ranking of risks. A similar process will take place during the second year, when HCEPP begins looking at strategies to address identified risks of concern.

In assessing risks within Hamilton County, HCEPP identified five areas of concern, including impacts to human health, ecosystems, quality of life, and economy, as well as equality of environmental impact. Compared with other risk-based prioritization efforts throughout the United States (for instance, in Seattle, Florida, Ohio, Tennessee and other locations), HCEPP is unique in its separate attention to environmental justice. If considered at all, earlier projects merely lumped environmental justice issues into quality of life considerations. Perceiving distinctively different issues that underpin environmental justice and quality of life, HCEPP organizers and members of the Consensus Forum chose to regard each as a separate concern.

Scope of Involvement

This separate consideration for equality of environmental impact required that members of working groups appreciate the central issues of environmental justice, understand how to identify relevant information and, then evaluate whether or not that information indicates disproportionate environmental impacts. Within the context of HCEPP interest and organization, project director, Pat Timm and I agreed upon my role, approach, and anticipated products to aid working groups in their efforts to consider environmental justice within Hamilton County. The scope of my involvement included the following three categories of involvement and associated activities:

Explore equality of environmental impact through a two-pronged approach

- Examine relevant socioeconomic information in conjunction with “environmental data” to assess whether or not any pattern of disproportionate environmental impact occurs in Hamilton County
- Develop a “neighborhood voice” of environmental conditions that expresses what issues are of concern to persons living in neighborhoods and communities within Hamilton County

Working group and committee assistance through participation in meetings and provide information upon request

- Communicate fundamentals of environmental equity to HCEPP working groups and committees
- Suggest appropriate means for groups to assess equality of environmental impact—that is, to encourage working groups and committees to identify locations where environmental impacts occur (for instance, geographical areas and occupations) and then examine social characteristics (including income, race, ethnicity, gender, age, etc.) of those groups most affected by those impacts
- Provide committee and working group discussions with concerns expressed by neighborhood and or community residents

Subsidiary activities of outreach to inform and enlist broader public participation in HCEPP

- Speak at community and other meetings
- Design “participation invitation” to encourage greater public participation
- Provide information to the public regarding HCEPP and serve as a contact person for persons interested in becoming involved with HCEPP

While the scope of my involvement with HCEPP included all of the above activities, my research during this internship focused upon environmental justice within Hamilton County. To this examination of environmental justice I now turn.

ENVIRONMENTAL JUSTICE WITHIN HAMILTON COUNTY, OHIO: A PRELIMINARY EXAMINATION

In many ways, Hamilton County offers both the best and the worst sort of “state of the environment.” Recognized assets of the area include numerous parks, nature centers and preserves; scenic waterways; and indications of improving water and air quality (Hamilton County Department of Environmental Services 1996) all within a varied topographic area that includes scenic hillsides, meandering valleys, and fertile floodplains.

However, Hamilton County is also a place where residents experience the ill effects of an environment degraded by human activity. Worries persist regarding high cancer rates, periodic episodes of “unhealthy” air quality, reports of illegal dumping, numerous landslides, waterways contaminated by sewage and industrial waste, and the haunting legacy of nuclear weapons production at a nearby Department of Energy facility. Clearly, residents in Hamilton County have much to consider when they think about the environment in their neighborhoods and nearby locations.

Examinations of environmental justice necessarily interweave environmental and social information. In this section, I describe preliminary research that supplements consideration of “objective” indicators of environmental quality with locally identified concerns to investigate disproportionate environmental impacts with a broader appreciation than previously available. I begin with background socioeconomic information within Hamilton County—looking at the neighborhoods and communities both to recognize identifiable groups and to distinguish where those groups reside. Next, I discuss the geographic distribution of TRI reporting facilities (as a conservative indicator of pollution sources) in connection with socioeconomic status to look for an indication of “scientifically-identified” pattern of disproportionate environmental impacts. Finally, to reveal the riskscape as an experienced part of neighborhood life, I present preliminary environmental impact information from the view of residents in some neighborhoods within Hamilton County.

Socioeconomic Description

1990 census data describe diversity among residents within Hamilton County in largely “black and white” terms. County-wide the white population is around seventy-seven percent of the total population; blacks comprise nearly twenty-one percent, which leaves little more than one percent of the population to make up a combined total “other” racial categorization (U.S. Census Bureau 1990a). Within Hamilton County, residential neighborhoods tend to be segregated; while a few neighborhoods and communities maintain a dynamically diverse population (Maloney and Buelow 1997:107), most areas have either heavily proportioned white or black populations. Thirty-one out of the forty-five major political jurisdictions within Hamilton County are comprised of eighty-five percent or higher white or black residents (U. S. Census Bureau 1990b). Neighborhoods and communities having higher percent people of color are distributed within Cincinnati along the western side of the Mill Creek and to the east of Interstate 75; other areas with higher proportions people of color are located in a section northeast of Cincinnati and north of Cincinnati along the western side of Interstate 75.

However, census data do not completely describe the residents of Hamilton County. Within Hamilton County, a distinguishable third group has been identified for demographic consideration: Appalachians are known to have migrated and settled in the area in significant

numbers. McKee, Obermiller and Neely consider Appalachians comparable to other ethnic groups, sharing a common cultural heritage, religious orientation, values, customs, and expectations (McKee and Obermiller 1978:2-3, Neely 1987:43-44). Despite such cultural distinction, however, no straightforward identification of “Appalachianess” is apparent from census data. To flesh out this information, Maloney and Buelow use a combination of poverty index, racial composition, adult education levels, school dropout rates, teen jobless rate, occupation, family size, and the expert opinions of social agency staff and community residents in the identified areas (1997:28).

Adding Appalachian neighborhoods and communities into the Hamilton County picture “fills in” those “white” areas along the western edge of Mill Creek, at the eastern portion of Cincinnati along the Ohio River, and a large space between the highways of Interstates 75 and 71. Maloney and Buelow identify as “Appalachian” nine and a half neighborhoods within Cincinnati and several communities outside Cincinnati, including Norwood, Elmwood Place, and portions of western Hamilton County (1997:47).

For this examination of equality of environmental impact, recognizing these three groups (whites, African Americans, and Appalachians) is instructive. Maloney and Buelow note that within Hamilton County “In many ways white Appalachians and African Americans are in comparable positions regarding socioeconomic status” (1997:47). African American and Appalachian neighborhoods in Cincinnati have the highest rates of non-high school completion (Maloney and Buelow 1997:63). While being African American or Appalachian is not synonymous with poverty, there were only two census tracts within Cincinnati with higher than median poverty levels that were not either within predominantly African American or Appalachian neighborhoods (Maloney and Buelow 1997:45-46). Having drawn this socioeconomic picture of Hamilton County, I move to consider scientifically identified measures of environmental impact.

Traditional Environmental Indicators

Traditional approaches to examine environmental justice have relied heavily upon source data from industries in connection with socioeconomic data to look for disproportionate sitings or chemical exposures in communities that are either economically disadvantaged or heavily populated by minorities. Although I did not have access to necessary computer software to conduct statistical analysis during my internship, I recognize that information of this type provides a valuable source of information. Intending to conduct statistical analysis at a later time, if indicated, I visually examined the geographic distribution of TRI reporting facilities locations with consideration for socioeconomic characteristics in nearby neighborhoods within Hamilton County as a precursor to statistical analyses.

U.S. EPA facilitates such visual examination of pollution sources (including Superfund, RCRA, TRI among others) in combination with selected socioeconomic information through an interactive geographic information system (GIS) accessible through Internet connections (U.S. EPA 1997a). Maps¹ used in this study were generated through U.S. EPA defining Hamilton County, Ohio as the region of interest during August 1997. While it has been often said, “a picture is worth a thousand words,” these maps do not “speak for themselves;” nor do they tell the entire story. The following discussion contextualizes the “obvious” information in light of known social and economic conditions within Hamilton County.

To begin, I examined the distribution of TRI reporting facilities within Hamilton County (US EPA 1997b). Immediately obvious is the proximity of most of these sites to freeway and rail

access to facilitate transportation of goods; it is also apparent that they are situated primarily along waterways (especially along the Mill and Duck Creeks) which serve as ready means for waste water discharge. When considering only transportation and waste water discharge, siting of these facilities seems pretty straight-forward: Manufacturing facilities are located in places that fill their requisite needs with the least amount of hassle.

Such “obvious” interpretations become more complicated when social information is considered. For instance, the majority of TRI facilities appear to be located in areas that Maloney and Buelow report as having above median levels of poverty (1997:31). Correspondence between percent people of color in combination with TRI facilities also appears quite clear; most of these facilities are either within, upstream, or upwind from predominantly African American or Appalachian neighborhoods and communities (Maloney and Buelow 1997:45). It is also important to note that these are the most densely populated areas within Hamilton County. Simply stated, this means that in those areas having more TRI facilities (neighborhoods of color or Appalachian enclaves with higher than median levels of poverty), very large numbers of people are potentially affected. Based upon the visual evidence and logical reasoning, there is ample indication warranting further statistical analyses to understand better both the level and degree of toxic exposure in these neighborhoods.

At the same time that “more and better science” may supply answers to increasingly sophisticated questions regarding the clinical effects connected with varying levels of exposure to single or even multiple toxic chemicals, science holds little promise for answering the underlying questions of interest in examinations of environmental justice. Bullard describes these questions as “who gets what, where, how much, how often, and why” (1996:496). To understand the neighborhood riskscape we must also ask, “how do the people who live in these areas feel about their neighborhood’s environment?” It is to these locally identified environmental concerns that I now turn.

Neighborhood View

Qualitative information for this study was gained through several avenues including a review of current media coverage of local “environmental” concerns and interests, comments regarding environmental concerns/interests expressed during community council meetings, comments expressed at other interest group meetings and/or events, and information gained through personal interviewing. Initial contact with respondents was primarily made through community council presentations and personal referrals. While it is apparent that public involvement with community councils within the City of Cincinnati is not entirely representative, neighborhood organizations of this sort enjoy participation levels of nearly twelve percent (Thomas 1986:43-44). I also made contacts with residents through environmentally oriented special interest meetings and events such as a litter clean-up day and a tour of community gardens. This approach provided access to residents with a demonstrated interest in neighborhood and “environmental” concerns.

I conducted sixty-one interviews with individuals in twenty-two different neighborhoods and communities within Hamilton County. The interviews were semi-structured, consisting of nine open-ended questions designed to provide respondents with the opportunity to name their neighborhood of residence, describe environmental problems of concern to them (along with any associated effects), and explain how they feel their neighborhood problems compare with those faced by other neighborhoods in Hamilton County (See Appendix A). With appreciation for

ethical statements from both SfAA and the National Association of Practicing Anthropologists (NAPA), I engaged respondents' participation through open and forthright means. At the beginning of each interview, I gained respondents' verbal permission to take notes and explained the context of my research, including the following information:

- I named SfAA and OSEC as sponsors of my internship.
- I reported that my research was being conducted on behalf of HCEPP and described the stated goals of the overall project.
- I explained my role within HCEPP and my research interest.
- I disclosed the products of my research to include reports to HCEPP and SfAA, as well as providing the basis for my Master's thesis.

My preliminary examination of some neighborhoods within Hamilton County indicates that lower-income African American and Appalachian neighborhoods perceive a different riskscape than "better off" neighborhoods. Just as there were "obvious" reasons for the siting of manufacturing facilities, there are "obvious" reasons for neighborhood risk identification. As Sandman (1987) and Oleckno (1995) discuss risk perception, we can expect people to express more concern for those "environmental hazards" that are the closest to them and that have occurred most recently—these problems, after all, present eminent danger to residents' within their respective neighborhoods. From this perspective, we can understand why even high profile, regionally identified, serious environmental problems were absent from most respondents' lists of concerns. In this light, it "makes sense" that persons to whom I spoke from East End did not express concern about the Mill Creek and that residents in North Fairmount did not identify ground water contamination near Fernald as an environmental problem that concerns them.

Besides temporal and spatial considerations, other reasons for distinct neighborhood riskscape appear when we change the driving perspective of risk from that of a "scientist" to a resident. A range of neighborhood environmental concerns was expressed throughout Hamilton County. While most respondents demonstrated an awareness of "classic" environmental problems, those conditions were not always mentioned as concerns within neighborhoods. In general, neighborhoods and communities that were more affluent identified primary concerns in terms of the scientific view (such as toxic substances, pollution, and sources) and expressed interest in environmental problems beyond their own neighborhoods. The experience of some residents in one Cincinnati neighborhood, Pleasant Ridge, provides a good example.

Over the past dozen years, residents in Pleasant Ridge have been investigating concerns connected with a chemical company located in their neighborhood. Taking a proactive position (or "stubborn" as one resident described herself), residents inserted themselves in the company's business—reviewing industry work plans and the like. After many years, false starts, and serious setbacks the residents now feel they are making real progress in cleaning up some serious environmental problems. Bolstered by their success, these residents are sensitive to the potential problems other companies pose in surrounding neighborhoods.

In addition to becoming "watch-dogs" for area concerns, residents from these more affluent neighborhoods also demonstrate interest in broad "environmental problems;" they join regionally centered (rather than neighborhood focused) environmental groups concerned with everything from hillside preservation, Mill Creek restoration, land use policy, pollution reduction, and resource conservation.

In contrast, low-income neighborhoods expressed the scientifically constructed view of environmental risk within their neighborhoods in a more limited way. While a couple of neighborhoods have explicitly employed scientific examinations to demonstrate disproportionate impact (e.g., Lower Price Hill and Winton Hills), the most frequently-identified problems throughout low-income neighborhoods were of a rather different sort: litter, illegal dumping of various types, improper garbage set-out, odors, overgrown empty lots, vacant and decaying buildings, and sewage overflows onto streets and into homes. While these concerns would likely not be considered very dangerous according to traditional assessments of environmental risks, they present continuing hazards, highly visible in the riskscape of lower-income neighborhoods; yet these kinds of hazards are absent almost entirely from “better off” neighborhoods.

Besides experiencing these localized effects, residents of neighborhoods having higher rates of poverty feel they do not receive sufficient support (in materials or “manpower”) to deal with their problems—no matter how seemingly small. One resident told me, “Poor neighborhoods just can’t get as many city resourcesæ...For instance corner trash containers...there is big difference in the quality and quantity [of them] in Northside compared to Hyde Park.” This response not only identifies an unmet need, but also conveys a sense of unequal treatment among neighborhoods.

Complaints about “problem response” amplify the frustrations of inadequate supplies. Residents in high poverty areas say that officials do not enforce laws and ordinances in their neighborhoods. Residents charge, “There is zero enforcement” time and time again. Non-enforced, citable offenses range from improper trash set out in Northside to illegal dumping of construction debris in North Fairmount. People also perceive great disparity in the way officials handle complaints between neighborhoods. Whether the issue was enforcement of noise, littering, or dumping ordinances, residents throughout disadvantaged neighborhoods claim, “You wouldn’t see that in Hyde Park.” Residents in Hamilton County clearly perceive a difference in treatment among neighborhood; their interpretation is that the whiter, more affluent communities “count more” in Hamilton County both in getting response to and resolution of their concerns.

The perceived riskscape affects how residents feel about their neighborhoods; when judged favorably (that is, when their environmental problems are acknowledged and managed), residents express pride in their neighborhood and seem confident in their ability to handle future problems. Such optimism is expressed in affluent neighborhoods and also in certain “less advantaged” neighborhoods where an effective internal leadership has developed to manage problems. Two neighborhoods in particular illustrate the point.

Lower Price Hill is recognized as a low-income, Appalachian neighborhood located in the Mill Creek valley to the west of the downtown region. Acknowledged deleterious environmental conditions within Lower Price Hill since the very early 1990s combined with poor health records and educational achievement to indicate disproportionate effects for children in Lower Price Hill as compared with children in other neighborhoods within Cincinnati (Lower Price Hill Task Force 1990). Since then, two other projects specifically named as “environmental justice efforts” focus on educating residents regarding household pollution prevention and in developing neighborhood environmental leadership. Through success in these initiatives, residents of Lower Price Hill assume a more proactive position for environmental improvement within their neighborhood.

In a different area of Cincinnati, The Environmental Justice Advocacy Project focuses on Winton Hills, a lower-income, predominantly African American neighborhood. This project is an effort 1) by community-based leaders to identify environmental risks and educate residents about those risks, 2) to include residents in developing strategies to deal with environmental

risks, and 3) to empower residents to advocate for environmental justice. Like Lower Price Hill, Winton Hills is a community whose environmental problems are widely acknowledged by the public. Besides a large industrial presence in the community, this neighborhood includes five CERCLA (Superfund) sites. With this initiative, residents are making their health concerns more widely known and are getting greater institutional response from Cincinnati Office of Environmental Management, Ohio EPA, and U.S. EPA.

There seems to be a building block effect for accomplishment; communities gain confidence as their ability to take control over the daily risks improves, and successful outcomes lead to involvement in larger issues. However, in neighborhoods where concerns go ignored and remain unaddressed, the effect is far different. In these neighborhoods, where inaction demonstrates little appreciation for the environmental concerns held by residents, people eventually even stop complaining: “Talk just doesn’t get much done very often,” remarked one South Cumminsville resident.

With this more careful consideration, it is obvious that the concerns expressed within poorer neighborhoods (whether African American or Appalachian) do not stem from ignorance of broader environmental issues; nor is it the case that these groups only recognize the “little problems.” Rather, the patterned expression of these difficulties throughout poorer neighborhoods is a signal that society has left unattended even the most basic environmental problems of the economically depressed and politically powerless. In a region where, as Maloney and Buelow have noted (1997:8), political, economic and social policy have concentrated poor African American and Appalachian populations into relatively few neighborhoods, institutional barriers inhibit environmental improvement—this seems to indicate environmental injustice in its most fundamental form.

Recommendations

Allowing examination of whether or not there is an inequality of environmental impact according to neighborhood perspectives as well as “objective” evidence is appropriate; after all, how residents in a given neighborhood interpret its “livability” *should* have great relevance in a democratic society (Lake 1996:162). Based upon this preliminary study of environmental equality within Hamilton County, I make three broad recommendations to enhance understanding of neighborhood level perceptions regarding their environment. The benefits of such enhanced appreciation would assist examinations of environmental justice, in general, and in any attempts to set priorities, in particular.

1. Employ a more sophisticated use of quantitative analysis. Statistical analyses should move beyond investigating relationships between poverty levels, peoples of color and location of facilities that either release or have the potential to release hazardous and/or toxic substances; examinations should also investigate levels of exposure, multiple compound exposures, and their associated risk. Roger McClellan, president of the Chemical Industry Institute of Toxicology states that “toxicologists need ‘to get off the tunnel vision of single-risk factors and start to look at multiple risk factors’” (quoted in Watanabe 1997:4). Such analyses could reveal a more complete understanding of health effects related to multiple compounds.
2. Develop a greater appreciation for the neighborhood perception of environmental risks through comprehensive qualitative analyses. Since there appears to be great variability in expressed environmental concerns among (and to a lesser degree, within) neighborhoods,

a comprehensive approach to recognize the social basis for disproportionate environmental impacts should include the following:

- Historical review of regional environment—subsistence and industry including associated environmental consequences—to understand how the current “state of the environment” came to be.
 - A profile of environmental activism within the neighborhoods and communities of Hamilton County—including expressed concerns, responses and actions, as well as effectiveness—to understand better the level of involvement and important concerns expressed within neighborhoods.
 - Contextualized placement of neighborhoods, communities and Hamilton County within larger socioeconomic and political entities—state, nation, globe—to appreciate to degree to which these smaller geopolitical units can address identified environmental concerns.
3. And finally, it is vital for policymakers to consider the *contextualized* setting of risk within neighborhoods when investigating environmental injustice; contemplate the meaning of “worst” as it relates to environmental problems as experienced in the neighborhoods where we live. Are the worst environmental problems always those defined by science, or could “worst” describe problems that are “basic” for our daily survival and participation in society? How can we measure the total effects of environmental harm that result from and perpetuate social injustice?

Incorporating locally constructed knowledge of environmental problems in examinations of equality of environmental impacts also has implications beyond Hamilton County, extending even to global efforts to assess environmental justice. I find efforts to assess environmental risks in developing countries analogous to other developmental issues where the United States’ model has been exported wholesale to “fix” the problems of poorer nations (Britan 1991:2). This kind of policy transplant should be considered carefully—as Martin Shubik warns, “There is no magic scientific, political, or societal formula to deal with the growing list of risks that face . . . society” (1991:9). In fact, appeals that claim “objectivity as the hallmark of science” (Schrader-Frechette 1996:291) invoke authority and encourage uncritical acceptance of “scientific” findings. The whole question of “how safe is safe enough” is a socially constructed value judgment; but when that question is answered by a “scientist,” opinion often becomes fact (Freudenburg 1996:14). We should not hesitate to use scientific insight when appropriate—but, to understand the effects of inequalities of environmental impact, we must also recognize and incorporate subjective interpretations of risk in ways that make sense within contextualized experience.

THE ANTHROPOLOGICAL CONTRIBUTION

My approach for examining equality of environmental impact in Hamilton County, Ohio is distinguishable as “anthropological” in both orientation and method leading to an expanded regard for environmental justice. From the outset, my anthropological appreciation for locally constructed knowledge, questions of proof, and a regard for risk in context afforded a distinct vantage point from which to examine equality of environmental impact.

For instance, in reviewing other investigations of environmental justice, the anthropological appreciation for locally-constructed knowledge channeled my attention critically: During this review it became obvious to me that the established approach for investigating equality of environmental impact relied exclusively upon a narrow scientific construction of risk. To accommodate scientific methods the scale of investigations has remained broad, sacrificing the ability to recognize variability within an area in order to maintain statistical sensitivity.

Anthropological insight also directed my attention toward efforts to “prove” environmental injustice. Researchers such as Bullard (1994b), Ruben and Smith (1994), Hampson and Reppy (1997), Stephens (1996), Yandle and Burton (1996) and Cutter and Solecki (1996) have investigated questions of disproportionate environmental threats using risk assessments and a broad range of statistical analyses to answer questions of interest to “experts.” That is, the studies have investigated increased risk in narrow probabilistic terms (Wolfe 1993:249), looking only at scientifically identified chemical and or biological agents of potential harm according to a Western biomedical standpoint, scientifically estimated levels of toxicity, and scientifically accepted technological measurements of these substances. This information has been used in conjunction with state recognized socioeconomic descriptions of human populations in a region to answer questions of disproportionate risk in an “objective” way—placing the burden of proof on scientific tools rather than subjective interpretations and political concerns (Nash 1996:196). However, this approach has only *ideally* provided a process wherein hazards are objectively identified and evaluated.

From an anthropological perspective, several questions took shape: Is this codified approach the only appropriate way to address the matter of risk in examining disproportionate environmental impacts? Is the view of risk held by the American public reflected in this approach? Several authors including Wolfe (1993), Sandman (1987), Oleckno (1995) suggest that often the public view risk quite differently than so-called “risk experts.” If there is divergence among the perceived riskscapes held by experts and the public, should not environmental risk in context of locally constructed knowledge be incorporated in evaluations of environmental justice? How could the public view be used to examine inequalities?

Anthropologists have been able to incorporate local views into environmental health assessments (such as in Yacoob and Whiteford 1995; USAID 1993a and 1993b) when the “hard data” required for traditional assessments of risk are missing or inadequate. Although these examples demonstrate a useful source of information regarding environmental risk and health, they also illustrate the marginal status afforded to such local knowledge. Only in the absence of “hard” data have the local views been “resorted to” for information. The dichotomy between “real” risks and “perceived” hazards persist.

While there have been efforts to understand attitudes and perceptions of minority groups toward environmental issues (for instance, Deblar and Associates’ 1995 survey of African Americans throughout Ohio, as well as a current survey sponsored by Blacks in Government within Hamilton County), there have been no attempts to systematically investigate disproportionate environmental impacts based upon the level and degree of expressed concerns in combination with perceived effects within neighborhoods. This insight leads me to question whether or not the “expert” approach alone adequately portrays the riskscape experienced by neighborhood residents.

LESSONS FROM THE FIELD

Involvement in this internship provided a valuable practical experience—an opportunity to learn from the things that went right (and to learn even more from the things that could have gone better). In the spirit of “experience being the best teacher,” I share the following lessons from the field.

- *Become familiar with background information on your anticipated research topic and with the project in which your research is embedded*

While I was well-acquainted with environmental justice, risk assessment, and risk perception, I was not as informed regarding risk prioritization or comparative risk efforts. I was unaware of the breadth of resistance to projects of this sort prior to my involvement. Had I understood the controversy over prioritization efforts such as these, I could have assessed my own view on the matter before involvement and been better prepared to deal with resistance when it occurred.

- *Bring to the field a strong theoretical frame through which to examine any research question*

A strong theoretical grounding provides explicit means to identify a research problem and to identify appropriate means to solve the problem (Lett 1987:77). Prior to my involvement with HCEPP, I researched several theoretical paradigms and identified political ecology as particularly useful in examinations of the human/environmental dynamic.

Combining essential characteristics of political economy and human ecology (Swift 1993:xiii; Stonich 1993:25; Martinez-Alier 1995:79; Villanueva 1995:79), political ecology expands “the perspective of political economy to include a systematic examination of the distribution and use of resources and the dynamic contradictions between society and natural resources” (Stonich 1993:25). Stonich names political ecology as one of the major frameworks to understand environmental destruction through a variety of disciplines and to demonstrate how interconnected social, economic, and political processes affect the way natural resources are exploited (1993:24-25). This theoretical frame helped guide my appreciation of contextualized risk identification and multi-layered environmental justice interpretations.

- *Recognize the political and economic position of the project*

Whether or not a project seems “worthwhile” may have little to do with its public acceptability; the viability of any project ultimately depends upon public and political support. Recognizing the context of the project—who are the stakeholders, what are their positions, how do they influence others—helps to signal potential difficulties. For instance, support of HCEPP is split; some highly visible local environmentalists strongly oppose the effort while others advocate for it. Both of these constituencies garner political attention and influence funding.

Fund raising became difficult for HCEPP because the project had not demonstrated “public support.” Although the project had involved more than 200 citizen volunteers for almost a year and had written letters of support from all three Hamilton County Commissioners, the Cincinnati Mayor’s office had remained silent regarding HCEPP’s efforts. As funds dwindled, the fate of the project became in doubt. Although the Mayor’s office did belatedly endorse HCEPP in July, there has been no significant improvement in the funding situation. The long term prospects for HCEPP remain questionable.

Recognizing the political and economic context of this (or any) project is vital for understanding how the project “fits in” to local, regional, and national efforts; for interns like myself this political/economic interplay also has two immediate implications. First, if my funding had relied upon HCEPP funds, I likely would have experienced a personal crisis—there simply would not have been money to pay me. Second, if the board of trustees had not identified a source of “emergency funding,” there would not have been a project with which to intern. In this way, the political and economic situation also determines whether or not the intern can “fit in” at all.

- *Establish a strong mentoring network*

As interns, we are “there to learn;” we are also “there to do.” Mentors prove invaluable in helping us “learn what to do.” Ideally interns have an established mentor network built-in to their involvement—there are advisors in the work setting, from the academic institution, and through connections to other professionals. A strong mentoring network is important because one or more of these advisors may not be readily available when critical questions arise. My experience illustrates the necessity for broader connections.

After I had been involved with HCEPP for only a month, my agency supervisor required a medical leave of absence from the project; she was unable to participate actively in HCEPP for the duration of my internship. My academic advisors were sometimes difficult to access due to my internship location (over one thousand miles away) and their involvement in other research over the summer. When this less than ideal situation developed, broader connections with other anthropologists in the region and in SfAA provided critical guidance. Without such a network, “learning what to do” would have been much more difficult.

- *Sharpen critical thinking through coursework and faculty contact*

Several times during my internship I encountered “obvious” information (i.e., the siting of TRI facilities near transportation corridors and waterways). Only through my exposure to a wide range of coursework and contact with faculty and professionals in other disciplines (including toxicology, geology, geography, sociology, economics, and ecology) was I prepared to question what conditions underlie such apparent situations. Especially when field work is conducted in a familiar setting (as was my case), it may be difficult to critically assess “obvious” information. A guide here may be: There are no “easy” answers—if something seems self-evident, careful consideration is particularly important.

- *Include a strong appreciation for statistics in your anthropological toolkit*

The language of statistics has become the vernacular of science and socio-political influence. Efforts to objectify evaluation reach into virtually every endeavor, and statistical measures are most often used to quantify evaluation results. Whether or not statistical analyses provide the best means to accomplish such efforts, we must understand the processes so that we are familiar with underlying assumptions, procedures, and limitations. Only with this understanding can we, as researchers, become discriminating consumers of reported results.

I came to this internship with six courses in statistics and/or statistical applications that provided me with a working understanding of statistical analyses. This background prepared me to recognize crucial differences in research designs aimed at “testing” charges of environmental injustice. With that understanding, I was in a far better position to assess the respective appropriateness of studies that yielded conflicting results.

- *Develop appropriate skills through coursework and practical experience*

My practical experience and research background provided a number of useful general skills for this internship including computer competence, effective written and oral communication, public speaking, and knowing how to research environmental laws and policies, socioeconomic indicators, and environmental quality. In addition, I developed an appreciation for risk assessment as a specific skill to understand traditional approaches for measuring risk within the United States.

In an independent study through the University of South Florida's College of Public Health, toxicologist Dr. Raymond Harbison directed my examination of the risk assessment process and arranged for me to engage in a semester-long involvement with a major environmental consulting firm. This involvement was designed to familiarize me with human health and ecological risk assessments "in progress." Through this experience, I developed an understanding of risk assessment procedures (including underlying assumptions, uncertainties and limitations) which proved particularly helpful as I considered measures of "proof" traditionally relied upon in investigations of environmental injustice.

- *Remain flexible*

A final word of advice for interns is to remain open—the "field" is not a controlled research setting and may present unexpected problems as well as opportunities. In my case, I went to the field with a contract negotiated through SfAA which described my involvement with HCEPP as working with the Project Director in four neighborhoods to engage people in their neighborhood organizations, councils, and municipal governmental settings. I was also tasked to find ways to connect these people, their experiences, and their information with HCEPP. I left home for my internship fairly confident that I knew what I would be doing and with whom I would be working.

When I arrived at HCEPP, however, I learned that the Project Director envisioned my participation differently: She intended that I assist working groups to appreciate environmental justice, develop a county-wide sense of expressed environmental concern, and encourage broader public participation in the project. This description shifted the focus of my research (from primarily public participation to environmental justice) and enlarged the area of research interest (from four neighborhoods to an entire county). Although I briefly considered insisting upon the original agreement, I recognized that the needs of the project would be served better if my participation could be adjusted. After assessing my own qualifications, I decided to accept the modified position.

Flexibility, then, was key for my successful internship experience. My internship provides one example of unanticipated field situations; there are certainly others. In changing conditions, interns who are unable or unwilling to adapt to shifting situations may miss opportunities. On the other hand, preparation and versatility provide the tools and confidence necessary to monitor research requirements and adjust when required.

The above "lessons" are but a sampling of things I learned during my involvement with HCEPP. As prospective interns consider research options, I suggest that "doing your homework" will increase the likelihood for having a similarly positive, yet unique research experience. Best of luck to you, and happy interning!!

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APPENDIX A

Guide for Semi-Structured Interviews

1. In what neighborhood do you live?
2. What are some of the things you value in you neighborhood environment?
3. What are some of the concerns you have about water, air or land in your neighborhood?
4. What problem(s) do you think are the most serious?
5. How do you feel about the environmental conditions in your neighborhood compared with others in Hamilton County?
6. Do you think the problems in your neighborhood are the same or different from others?
7. How are they similar or different?
8. Are there any other “environmental” problems that concern you?
9. Are there any other people you think I should speak with about environmental concerns in your neighborhood?