

WHO IS THE COMMUNITY?/WHAT IS THE COMMUNITY?

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Community-based participatory research (CBPR) has been one of the most exciting developments in public health and social science research, while becoming an important practical feature for people facing environmental hazards. CBPR has highlighted the importance of community-based knowledge, community rights to control data and research, and community participation (Israel et al 1998; Quigley et al. 2000; Shepard et al. 2003; Minkler and Wallerstein 2003). Researchers in this field are aware of conflicting definitions of community (MacQueen et al. 2001), though much of the literature focuses on the identification of stakeholders and the protection of community rights in the research process. Far less has been written about the definition and nature of communities.

Our widespread use of the term “community” often masks a multiple reality in which there are diverse types of communities, as well as differences within communities. By exploring different meanings of community, we can develop a fuller approach to this growing CBPR movement, with a focus on environmental justice and environmental health activism. For example, some definitions of community involve a geographic area, such as a neighborhood or a city, while others involve a group of people united by racial/ethnic/tribal identity, by a common social or political goal, or by a shared disease experience. These other, transgeographic, communities are central to much identity, awareness, and activism.

This paper examines issues in both geographic and transgeographic communities. I am not discussing the benefits and drawbacks of geographic measures used in studying environmental inequality, since this is adequately discussed elsewhere (Greenberg 1993; Szasz and Meuser 1997; Krieg 1998; Mohai and Saha 2003), though I will discuss some recent work that points to historical differences as sometimes being more important than present geographic boundary differences.

Defining Communities

The history of defining community is long and detailed. One scholar located 94 different definitions, and that was over a half-century ago (Hillery 1955, cited in Patrick and Wickizer 1995); there are doubtless many more definitions at present. I want to mention two recent studies that touch on interesting arrays of elements of the definition of community. MacQueen et al. (2001) conducted 113 qualitative interviews that asked people involved with community participation in HIV vaccine trials to say what community meant to them. The researchers used cluster analysis to examine the qualitative codes. Although this population is different than most environmental health and environmental justice populations, the rigorous methodology attached to these open-ended questions about the nature of community has important generalizability. MacQueen’s team found five core elements. 1) *Locus, a sense of place*, referred to a geographic entity ranging from neighborhood to city size, or a particular milieu around which people gathered (such as a church or recreation center). 2) *Sharing, common interests and perspectives*, referred to common interests and values that could cross geographic boundaries. 3) *joint action, a sense of coherence and identity*, included informal common activities such as sharing tasks and helping neighbors, but these were not necessarily intentionally designed to create community cohesion. 4) *Social ties* involved relationships that created the ongoing sense of cohesion. 5)

Diversity referred not primarily to ethnic groupings, but to the social complexity within communities in which a multiplicity of communities co-existed. MacQueen et al. note that the first four are similar to what numerous social scientists have previously found, but that the fifth element, diversity, was not previously identified. Perhaps more importantly, the researchers found that despite common identification of these core elements, respondents varied in how they perceived the importance of each. The chief implication of this is that community-based public health interventions need to operate on various levels, attending to varied definitions of community.

Patrick and Wickizer (1995) examine a smaller set of three elements. 1) *Community as place*, notably a geographically bounded location; 2) *Community as social interaction*, in which social networks and social supports are crucial; 3) *Community as political and social responsibility*, involving political and social motives in the formation of communal groups. They apply an integrated definition that includes all three, thus maintaining a geographic status. Perhaps their necessary inclusion of a geographic element is driven by a concern that a broad community with unobserved boundaries may be less amenable to community-level public health interventions. This is true, if the intervention involves something like home visits to take air and dust samples. However, if we take a larger view, and consider as an intervention the placement of breast cancer activists on federal review panels, then the unbounded definition of community works well. Patrick and Wickizer are also concerned that non-bounded communities may be transitory and may lack sufficient connections and commitment to bring forth the social supports that we expect of communities. Again, we must look at this in terms of how transgeographic communities work in practice. Many disease support groups and health social movement organizations function at a high level of social support, and for some disease groups internet-based and other non-local connections are the primary source of support since people may not be near other people with the same disease.

From my interpretation of MacQueen et al. (2001) and Patrick and Wickizer (1995), I take away several important elements of community: 1) Communities include a variety of geographic and transgeographic groupings, and sometimes involve a mixture of both types; 2) Whether bounded or un-bounded, communities only function effectively when they provide social support through social networks; 3) Communities generate collective social action, but are also formed as a result of such action; and 4) Community definitions change, even over a short time period. I now turn to examining how these concerns play out in both geographic and transgeographic communities.

Geographic Communities

Geographic Communities are More Than Geography

Much of environmental justice research has been driven by geographical notions of community, e.g. census tracts, zip codes, counties. For some scholars, one of the drawbacks in environmental justice research is the wide variety of definitions of community. For others, the very diversity of measures of community attests to the widespread corroboration of environmental inequity. Still, there remain considerable methodological problems with much of this work, and recent developments promise more precise approaches to measurement (Mohai and Saha 2003). Even in the face of some problems in method and measurement, there is broad acceptance that environmental inequality is a common feature of American life. But the mere existence of such inequality does not tell us much about the nature of the area, nor its ability to

organize. Also, as I will discuss, historical differences can be more important than present geographic boundary differences.

A geographic community facing an environmental problem is not simply a physical location of census tracts, or a neighborhood bounded by certain streets and geophysical features. After all, the mere collection of buildings and households does not provide a social phenomenon that can organize itself and wield power. Successful environmental justice struggles have benefited from the social cohesion and broad coherence of neighborhoods or municipalities, and the vehicle for such coherence is a community organization or a grouping of such organizations.

We know that many communities suffer environmental assaults, but that only a small fraction of them are able to mobilize to deal with those problems. Strong individual leaders are often important, but without some organizational form they cannot do much. Successful environmental health struggles have benefited from the social cohesion and broad coherence of neighborhoods. Toxics activists have often noted the incredible social support provided by the local organization. Often, that support stemmed from the fact that the activist group was the only reliable source of information and/or interpreter of health data. Indeed, such groups function to create communities of toxic sufferers that have not existed before.

The creation of such communities stems from the collective recognition that the problem – especially if it involves illness – is not an individual trouble, but rather a social problem. This is a difficult step for many people to make, since the typical community group-in-formation is composed of people who have not had prior experience in political organizing and are not used to such a collective outlook on attributing responsibility. But even if there are not ready-made political communities ready to respond to environmental crises, we do find glimmers of community-building capacity in the origins of toxic waste groups. In particular, churches and clergy, mainstays of many local communities, have played a significant role in many environmental struggles. This is based in part on the religious origins of much civil rights organizing, which played a crucial role in developing environmental justice efforts, but it also predates the major environmental justice landmarks and goes back to prior toxic waste activism.

Another important feature of organizing efforts around toxic waste, environmental health, and environmental justice is that they have brought the environmental movement to a community level, while also altering the class basis of the movement. Prior emphases on conservation, preservation, endangered species, rainforest destruction, ozone depletion, and other national global concerns often had no salience for local communities, and such emphases kept the environmental movement a largely middle class and upper middle class movement. Once toxic waste concerns developed, starting with Love Canal, working class and lower middle class people found their own communities to be the victims of environmental degradation. For them, the very act of dealing with environmental issues was an act of community solidarity.

Place and Health – Community-Level Effects

Once we center our attention on the community basis of environmental health organizing, we are transcending a focus on personal effects. By focusing on community-level effects, we are challenging a dominant paradigm in epidemiology that emphasizes individual-level attributes and outcomes. Environmental health activists have long argued that the individual-level focus fails to understand larger effects of hazards. Further, such activists point out, that dominant paradigm's emphasis on individual behaviors attributes responsibility to people rather than corporations, whole industries, government, and other social institutional actors (Wing 1994).

A burgeoning focus on the importance of place has piggybacked on that community paradigm shift, and has refocused much of our notions of health and the environment. Social ecological research shows that community characteristics are often more important than individual characteristics in predicting crime (Kennedy et al. 1998), disease (Link and Phelan 1995; Wilkinson 1996), and infant mortality (LaVeist 1992). For example, LaVeist's work shows that large cities with higher numbers of elected black officials have lower infant mortality rates, controlling for other factors. A likely explanation for this is that people and communities have a higher degree of empowerment and self-esteem, therefore making life overall less stressful and hence leading to better health outcomes. This line of research leads us to focus on the geographic rather than personal characteristics as determinants of neighborhood quality and health and psychological well-being. A good deal of the burgeoning health inequalities research takes this line of conceptualization and measurement (Kawachi and Berkman 2000).

Interestingly, this recent work on community-level factors is but the latest addition in a long stream of research that identified the benefits to health of social networks and social solidarity, a tradition that starts with Emile Durkheim, a founder of sociology in the late 19th century. Leighton's (1959) well-known Stirling County study of mental health found that areas which had less community integration and connection had worse rates of mental disorder. The community of Roseto, Pennsylvania, a town with extraordinarily high social cohesion and egalitarian relationships, was widely known for its low rates of heart disease in comparison to nearby towns with similar class status but less social integration (Bruhn and Wolf 1979). Recent social epidemiology work on community effects has burgeoned, though it has had to fight against criticisms that it falls into the trap of the "ecological fallacy," a common worry that measuring aggregate levels tells us nothing reliable about individuals. In response, many supporters of social ecological research argue that community effects are, in fact, centrally important. The proponents of social ecology and social epidemiology are spearheading a paradigm shift in how we look at the relationship between society and health. The implications of such a shift are great: if income disparity is so significant in health inequalities (Wilkinson 1996), then social interventions will largely target overall income distribution, taxation, social welfare, and other broad-based policies.

Macintyre et al.'s (2000) work on "place effects" provides an excellent review of issues in health and place. They note that social scientists have failed to incorporate the wealth of community studies, have worried excessively about the ecological fallacy, and have focused on individual health behaviors rather than community-level factors. In reviewing a number of studies on community-level factors, they point out that place effects are not meant to replace individuals' sociodemographic status, but that both must be taken into account. Both levels often interact; for example, social class is based on occupation, which in turn is shaped by the local economy. Macintyre and colleagues use an organizing framework of five types of local area features that can affect health: 1) physical features (e.g. air quality, climate), 2) availability of healthy environments (e.g. good housing, safe play areas), 3) services (e.g. education, transportation), 4) sociocultural features of neighborhoods (e.g. community history, crime), and 5) reputation of an area (e.g. how areas are perceived by residents and others).

By focusing on people's immediate sense of place, we can understand that the most important concerns may not be the larger crises that become powerful images in the media, but the more mundane environments that surround people. For example, while people are concerned with effects of "massive technology sites" (hazardous waste sites, factories, incinerators, landfills, superhighways, utility towers), those are not the only things that concern them. People

rate neighborhoods as being of low quality when they experience crime, poor lighting, abandoned and decrepit buildings, litter, trash, and disrepaired roads and sidewalks (Greenberg and Schneider 1996). To best understand such blight, a historical approach is necessary.

Community History

Communities are not merely aggregations of people living in a specified geographic area. They are organically developing sets of relationships that have a history of development and change. We can best understand communities when we examine them over time. Too often, when an environmental crisis occurs in a community, the response, of necessity, focuses on the present state of the community. Even when we are not studying a crisis, we may focus on a cross-section of one or more communities. For example, much research documenting race and class inequalities examines only current data on Toxic Release Inventory (TRI) emissions or the location of toxic storage and disposal facilities. That makes some sense, because the data to show inequalities usually is fairly recent data. But it doesn't allow us to understand the long-term development of the area.

Environmental justice research is in the midst of exciting transitions. From an early focus that relied mainly on unequal exposures to toxics, scholars are now tackling intriguing theoretical issues and expanding to new empirical areas, often with a historical framework. Sociologists are engaging in historical perspectives on environmental racism and injustice, tracing the roots of current problems to earlier centuries. For instance, Dorceta Taylor (1999) shows how the creation of parks and recreation facilities impacted communities of color, their living conditions, and their exposure to wastes. Robert Bullard and Glenn Johnson (1997) examine the significance of transportation in the creation and perpetuation of environmental injustice. I briefly note here a few examples of what community history can tell us.

David Pellow's (2002) Garbage Wars situates the current disputes over recycling programs in Chicago by examining a century of politics concerning public sanitation services, resource management, and community resources. Through this historic lens, the modern environmental inequity appears as part of a continuum in which black neighborhoods were always underserved and were used as dumping grounds for others' trash. From the early days of the horse and cart, to the compactor trucks and dumpsters, to the reduction plants, incinerators, landfills, and materials recovery facilities, Pellow follows the trash, the pollution, the hazards, and the human beings who face these by-products in homes, communities, and workplaces. Along the way we learn that some heroes of social welfare and labor rights, like Jane Addams, were also activists who worked to protect poor immigrants from the ill effects of waste pollution. Struggles over garbage are a long-term part of political, economic, and social conflict in our country, and indeed in nations throughout history. Any set of social actors that makes up a society is confronted with decisions on where they put waste, and where to build neighborhoods, parks, schools, and civic buildings. These actors always make trade-offs and agreements as to what will be where. Whether horse manure in the 19th century or dioxin in the 21st century, powerful groups will saddle subordinate groups with the burden.

Eric Krieg's (1998) study of environmental inequity in the metro Boston area employed a historical perspective to understand what might otherwise be an anomaly in environmental justice research. In the older urban parts of the area, inside the Route 128 ring highway, Krieg found traditional racial differences in environmental exposure. But outside that ring, class differences in exposure predominated. This is understandable by the post-1960s development of high-tech firms and suburbanization in the latter area. There were virtually no minorities to be

impacted there, but there were class differences. Without understanding the history of this regional development, we would be unable to explain the differences in exposure.

Nancy Maxwell (1996), in studying cancer incidence in Massachusetts, traces the history of cranberry bog development and railroad right-of-way building in order to take a long-range view of the source of environmental hazards. In communities with surviving traditional industry or agriculture, pollution burdens the lower-income, higher-poverty, and, in the case of industry, higher-minority communities. But in the moderately urbanized, generally suburban communities that were transformed by the high-tech boom in Massachusetts, a disproportionate burden of pollution from industry and agriculture falls on more prosperous communities.

In many cases, the intricacies of such historical trends are not known. Sometimes, as in the two examples above of Krieg's and Maxwell's work, present-day research can uncover the data. But this is not always the case, especially in sensitive matters. Ken Silver (1996), in his research on radiation exposure at the Los Alamos nuclear weapons site, points to the importance of "public history," in which oral history interviews provide the historical context that is necessary to understand the current conflict. In the case of a major government project, there would likely be an official history, but it would likely be a "triumphalist" history that celebrated the development of a project. Such a history would have no room for the critical perspectives of residents and workers who experienced actual or potential harm. In many cases, public history is the only history, since few communities have histories written about them.

Corrosive Communities

Distinctions between geographic and transgeographic do not necessarily tell us who is part of a community, nor do they capture differences within communities. We should not expect that communities are typically cohesive and united in their goals and desires. There are often multiple organizations addressing community issues, as well as divisions within communities. Couch and Kroll-Smith note that "chronic technological disasters," such as toxic waste crises, lead to intense inter-community and intra-community conflict (Couch and Kroll-Smith 1985; Kroll-Smith and Couch 1990). Freudenburg (1997) speaks of such locations as "corrosive communities."

Community conflict often centers around perceived economic benefits of industries. For example, in a well-known Louisiana conflict, a significant number of residents supported Shintech's plans to build a chemical plant that would produce chlorine, polyvinyl chloride (PVC), and other dangerous chemicals. In some cases, entire groups formed of black residents favored the siting, hoping to get in on the benefits so needed by a poor rural community (Robert and Toffolon-Weiss 2001: 103-135).

Pellow (2002) also demonstrates the importance of conflicts among the affected populations, in terms of their support for or opposition to garbage disposal practices and recycling activities. Such disputes are significant in many environmental justice communities, where some groups are willing to trade short-term job opportunities for long-term environmental degradation.

In fact, it is rare that an entire community unites around a toxic crisis. A unique example of total community cohesion can be seen the small rural hamlet of Grand Bois, LA, where all 301 residents joined a class-action lawsuit against Exxon for dumping oilfield waste in open pits (Robert and Toffolon-Weiss 2001: 139-143). A TV special on this episode, narrated by Ed Bradley, portrays one of the most amazing communities in the history of environmental justice

organizing, with lay discovery of the problem, intense popular investigation, cohesive litigation, and strategic alliances with university scientists and state legislators.

Communities of Denial

In the absence of corrosiveness and division, some communities respond to hazards in what seems to be a serious denial of the problem. Even workers engaged in some of the most hazardous production, e.g. shipbuilding, have a high capacity for denial of risk. Workers exhibit notions of personal invincibility, lack of knowledge, and willing trade-offs for their families' economic support (Nelkin and Brown 1984).

At the least, communities engage in what Zvestoski et al (2003) term "consensual community responses," a form of passive acceptance that leads to non-activism. This allows them to retain what they believe will be normalcy in the face of a potential crisis – in this case, a dioxin contamination in Providence, Rhode Island (Zvestoski et al. 2003). This is understandable, given the desire to minimize anxiety and to avoid trouble, as well as the likely awareness that such situations in other communities have led to long-term struggles.

Devra Davis' remarkable book, When Smoke Ran Like Water (Davis 2002), documents the ongoing denial in her home town of Donora, Pennsylvania, where a major air pollution crisis in 1948 killed 20, injured hundreds, and led to our modern air pollution laws. In the midst of the steel and zinc mills' massive contamination crisis, football players carried on their game, and people went about ordinary activities, despite their inability to see more than a few feet away. Donora residents had so long been used to such conditions that they maintained a sense of normalcy in the face of disaster.

At the extreme end of the spectrum, community identification with a primary or major employer can lead to boosterism, as seen in the film "Chemical Valley." The setting is Institute, West Virginia, the location of Union Carbide's only plant in the world other than Bhopal that produces methyl isocyanate (MIC), the deadly poison that killed 8,000 and injured 500,000 in 1984. In the face of a leak at the Institute plant – not of MIC – community activists organize, and are met with a massive parade down the town's main street, in which the workforce plays a central role in supporting the company. Despite the long history of safety malfeasance in both Bhopal and Institute, and Union Carbide's callousness and intransigence to the Bhopal victims, local boosters extol the wages, taxes, and ballfields brought by the company. This Institute example does actually meet the criteria for inclusion as a corrosive community in that the activists critical of Carbide were pitted against a strong pro-company movement that was clearly spearheaded by the firm itself.

Silenced Communities

We may also view communities of denial as "silenced communities." They have been let down by state and federal agencies that fail to provide the public health and environmental protection they should. The "recreancy" (Freudenburg 1993) of government agencies that do not carry out their mandate leaves communities without adequate access to knowledge and resources. They are silenced because they do not have the material with which to make their voice heard. State agencies are often unhelpful, either intentionally or because of being understaffed. A survey of all 50 states' responses to lay cancer cluster reports found that there were an estimated 1,300-1,650 such reports in 1988, clearly a large number for agencies already short-staffed. Many state health departments discouraged informants, in some cases requesting extensive data before they would go further. Rather than deal specifically with the complaint,

many health departments gave a routine response emphasizing the lifestyle causes of cancer, the fact that one of three Americans will develop some form of cancer, and that clusters are a random occurrence (Greenberg and Wartenberg 1991).

Even states with a strong record of public health, such as Massachusetts, have a hard time when it comes to environmental health crises. As a result of a large number complaints about the state's response to lay concerns over excess cancer rates in 20 communities led to state senate (Commonwealth of Massachusetts 1987) and university (Levy et al. 1986) investigations which found that the DPH studies were poorly conceived and methodologically weak. Most lacked a clear hypothesis, failed to mention potential exposure routes, and as a result rarely defined the geographic or temporal limits of the population at risk. Methods were presented erratically and inconsistently, case definitions were weak, environmental data were rarely presented, and statistical tests were inappropriately used (Levy et al. 1986). Frequently, exposed groups were diluted with unexposed individuals, and comparison groups were likely to include exposed individuals (Ozonoff and Boden 1987). The damaging effects of the poor studies and nonresponsiveness to the community led to the resignation of the public health commissioner, Bailus Walker, then head of the American Public Health Association (Brown 1992). More recently, citizens' groups have complained that the DPH holds up releasing data for years, simply to avoid embarrassment. For such reasons, case studies of many contaminated communities highlight residents' distrust of health studies (Levine 1982; Edelstein 1988; Brown and Mikkelsen 1990). And since health studies are seen as so crucial for scientific and social legitimation, communities are at a disadvantage.

Apart from communities of denial, other communities are silenced (though these examples below are of transgeographical communities). Environmental health scientists have faced this from a variety of sources: their own academic settings, state public health and environmental departments, and federal agencies such as EPA and CDC. While one might view this as punishment of a number of isolated individuals, activists and scientists believe that this is a series of conservative attacks on an environmental health community that focuses on preventing environmental exposures and environmentally induced diseases. In recent years, James Huff of the National Toxicology Program was pressured to halt presentation of scientific papers, Richard Jackson was removed as head of the CDC's Center for Environmental Health, and CDC and EPA purged from scientific review panels those scientists who supported stricter environmental regulation. Daubert challenges in courts are another part of this attack on scientists who provide testimony on environmental hazards.

TransGeographic Communities

Non-geographic communities are among our most important communities, especially in terms of activism. These can be a group of people united by racial/ethnic identity, a set of people and organizations bound by a political practice (e.g. the environmental justice community) or a group with a shared disease experience (e.g. the breast cancer activist community). It is very common to hear members of those communities refer very directly to them as such. In some cases, such an appellation may be largely one of identity politics – a person identifies with experiencing a certain social characteristic, a disease, a stigma, or other feature. To identify in this fashion is to “normalize” oneself and often to challenge the dominant social perceptions and institutions.

Politicized Illness Communities

Asthma activism among environmental justice groups is an interesting example of the intersection of illness experience and political involvement. Community-based organizations work to create a collective identity around the experience of asthma. Through collective identity, such groups link disease to shared grievances that might result from discrimination, structural dislocation, or other social determinants. These organizations frame asthma as an environmental justice issue, therefore transforming the personal experience of illness into a collective identity aimed at discovering and eliminating the social causes of asthma. This leads to what I term a “politicized illness experience.”

When people view asthma as related to both air pollution and to the living conditions of poor neighborhoods, they reconstruct asthma narratives differently than the narrative reconstruction that occurs with other chronic illnesses. Because asthma is increasingly framed in terms of air pollution and environmental justice, the disparities in asthma suffering are translated into the language of illness experience. Illness experience in the case of asthma is broader than that of the typical illness narrative. Such narratives typically incorporate perceived causes and effects of the disease with personal perception, work, family, relationships, and schooling. Asthma activists add the political economic framework surrounding the production of asthma and the political perspectives that situate asthma in terms of housing, transportation, neighborhood development, the general economy, and government regulations. This is why for a growing number of people and organizations, the experience of illness has transformed asthma from an individual disease into a social movement focused on health inequalities.

Communities of Activists

Taken at this political level, the appellation of “community” has an organized element, in that participants of this community work together across the boundaries of individual groups and of geographic areas. When people speak, for example, of the environmental justice community, they are viewing themselves as part of a collective endeavor. Interestingly, environmental justice groups pride themselves on working at the local community level, rather than as national organizations. They worry that forging national organizations would diminish the grassroots nature of their local origins and efforts. For these groups, a central element of their organizing is to build community capacity. This apparent disjuncture between focusing on local communities and defining those communities as part of a national community is in fact a unique element of a complex approach to community. The local community’s integrity is preserved by locating it as part of a movement of other local communities.

Fluid Boundaries of Communities

In referring to one of their components of community – shared concerns and responsibilities – Patrick and Wickizer (p. 51) make an important point on the fluidity of geographic and transgeographic boundaries:

Defining boundaries in terms of shared concerns or responsibilities may either expand or shrink the physical boundaries of community. A community may be geographically proximal to a concern (such as the local community of people who provide necessary support services to persons with chronic illness) or more distal (such as a national advocacy group for persons with disabilities). The boundaries shift with the nature of the need and the varying involvement of individuals and collectives.

This fluidity makes eminent sense when we observe the multiple levels on which environmental health activists work. They do so in what I call their character as “boundary movements” (Brown et al. 2004). One boundary they cross is the gap between lay and expert, and this is central to the core development of environmental health and environmental justice groups. They also cross the boundaries of different types of activist organizations, mobilizing in concert with groups that may start out from different directions, but converge (such as breast cancer advocacy groups and environmental organizations). Another boundary bridge involved how groups engage in activism that includes researchers, government professionals, and foundation leaders. In that situation, researchers may function as “advocacy scientists” (Krimsky 2000) and government officials may be part of social movement “interpenetration” (Wolfson 2001).

Divided Communities

There can be significant differences within transgeographic communities, even if they are not corrosive or divisive, as we see in some geographic communities. If we look at a non-geographic community, we find that the very large breast cancer community has within it a smaller, more radical environmental breast cancer movement that works towards four goals: 1) to broaden public awareness of potential environmental causes of breast cancer; 2) to increase research into environmental causes of breast cancer; 3) to create policy which could prevent environmental causes of breast cancer; and 4) to increase activist participation in research (McCormick et al. 2003).

The general breast cancer movement has addressed issues of care for breast cancer patients, knowledge about treatment options, especially in regard to mastectomies, lumpectomies and radiation, support for those affected by the disease, and increased research funding. Current government action includes the partnership between government and non-government sectors in the National Action Plan on Breast Cancer, established by President Clinton in 1994, among other projects. Private sector action includes the first National Breast Cancer Awareness Month, which promotes public awareness of breast cancer and usage of mammography as early detection, first held in 1985. Today, fundraising walks and runs during that month involve tens of thousands of people every year. The movement’s other successes include the production of a breast cancer stamp, whose additional cost above normal postage is given to governmental research institutions to further breast cancer research, and the Shop for the Cure campaign, whose merchants and credit card companies give a portion of the proceeds to breast cancer foundations. The general breast cancer movement’s success can also be seen in the amount of breast cancer research dollars, which have increased from \$90 million in 1990 to \$600 million in 1999 (Reiss and Martin 2000), and in the ability to win federal legislation, such as the Breast and Cervical Cancer Treatment Act of 2000.

The environmental breast cancer movement has reframed the successes of the broader breast cancer movement in order to focus on potential environmental causes and change how breast cancer is researched and publicly perceived. Some of those general movement successes are criticized by the environmental breast cancer movement. For example, for years people took for granted the position of the American Cancer Society, National Cancer Institute, and other parts of the “cancer establishment” that “mammography is the best form of prevention.” Environmental breast cancer activists argue that once a tumor is detected prevention has failed since the tumor now exists. This stance is assisted by the growing scientific awareness that

mammography is not very effective in women under 50. Activists also challenge the corporate control of Breast Cancer Awareness Month. They have additionally mounted a campaign to have breast cancer stamp revenues shifted to the National Institute of Environmental Health Sciences from the National Cancer Institute, which supports virtually no research on environmental factors. This movement's "Think Pink" campaign is strongly critical of the larger movement's reliance on shop-for-the-cure approaches, since they point out that the same firms that engage in corporate sponsorship also produce products that are known or suspected carcinogens (McCormick et al. 2003).

There are enough differences that we can consider this a divided movement, even if not corrosive. Unlike corrosive movements, where organizations are likely to be pitted against each other, the general breast cancer movement serves as a recruiting ground for the environmental breast cancer movement, and many activities are jointly sponsored. Importantly, all participants would likely view themselves as part of a broad, non-geographic community. By tracing the differences, however, we are able to grasp the forward-looking development of an environmentally conscious sector, one that ultimately may alter the larger community.

In summary, we can see that there are many types of communities, some geographic and others transgeographic. Certain definitions refer to harmful aspects of community, others to positive elements. Importantly, we learn from this diversity that we cannot be satisfied with a single definition or perspective on community. Each setting where an environmental problem occurs needs to be viewed from varied vantage points to understand what single or multiple communities are involved. Our actions will be guided by this more complex awareness. Further, communities change over time, and hence our approach to environmental problems will possibly change, even for the same situation.

Communities of Knowing: Political Communities and Science Communities

Environmental activists, in their challenges to dominant paradigms, have created major new approaches to knowledge. Well-versed in health effects of environmental contaminants and non-sustainable development, activists have developed communities of knowing. In her book, Who Knows, Lynn Nelson offers us valuable lessons about the collective nature of knowledge: "What I know depends inextricably on what *we* know, for some *we*. My claims to know are subject to community criteria, public notions of what constitutes evidence, so that, in an important sense, I can know only what *we* know, for some *we*." (Nelson 1990, p. 255).

Nelson argues that that it is incorrect to see beliefs as private property. That is as much an illusion as the illusion that real private property is completely private, without public or governmental support. In Nelson's words, "it is communities or groups that acquire and possess knowledge, and that focusing on individuals in epistemology is inappropriate. Individuals "have" beliefs and they know, but only in a derivative sense. Their beliefs and their "knowing" depend on public language and the conceptual scheme it embodies, and what they know and believe is constrained by public standards of evidence. The primary epistemological agents are groups -- or more accurately, epistemological communities." (Nelson 1990, p.256).

This meshes with "standpoint" theory of Nancy Hartsock that argues that an accurate perspective on social life can only stem from members of oppressed groups, or as I would phrase it, the accurate knowledge must include all or most of its knowledge base from affected communities. For Hartsock, knowledge from affected groups is not merely another voice in a

relativistic world. Rather, she calls it a "counterhegemonic force." Rather than frame this force in terms of epistemology, she frames it in terms of power and justice (1983).

Nelson (1990) believes that interpersonal experience and community membership play a central role in knowing. How then does a community of knowing form? And what indeed is such a community? The "science communities" that *know* are not only official groups of scientists, but also groups of people in the community that have particular interests and knowledge. These are not long established science communities, as in professional science. I view them as communities-in-formation.

So, what about these communities-in-formation? How were they constituted? These political communities were constituted as features of the post-World War II society of plastics, petroleum, and other chemicals. Although some communities had longer industrial histories – Woburn's problems in the late 20th century were rooted in 19th century tanneries in addition to the more modern chemicals -- the toxic waste crises that surround us are largely products of the last half-century. Unknowing, still unfound, certainly not yet acted on, these toxic waste sites were nevertheless constituted as communities that would share joint and communal suffering.

And when these communities became public social problems, we discovered a feature of modern society that had been lying in wait, quite literally underground: Not only were societies organized around the means of production, but they were also formed around the means of disposal. Just as the means of production was unequal and harmful to the average person, so too was the means of disposal unequal and harmful.

Each of these communities would have its own local history, its unique assortment of racial, ethnic, class, industrial, geographic, economic, and political connections and cleavages. Each would develop on its own course. And in total they would contribute to creating a major force in American life. Not only did we have many local political communities, but we had a broad, nationwide political community, the environmental health movement.

So, too, the individual science communities would retain both their local nature as science communities, but would become part of a national science community. They would discover diseases, they would uncover the sources for their local problems, and they would merge to become a national voice for alternative views of environmental causation of disease.

Building a New Environmental Health Community

Despite the many challenges to community mobilization that I have mentioned, this last section on "communities of knowing" points to great achievements. Hence, I close with a refreshing note on the continued development of a broad-based environmental health movement that is itself a substantial community. Starting with Love Canal in 1978, a toxic waste movement grew, becoming a substantial social movement in its own right, while also pushing the broader environmental movement to take on human health concerns. Shortly thereafter, a new environmental justice movement originated, taking those concerns to another level of race and class inequality, similarly becoming a movement and affecting the broader environmental movement.

In the past decade, a host of other groups have developed, focused on environmental health, and often linking to the toxic waste and environmental justice groups mentioned above. At the local level, this includes many organizations fighting pesticide spraying. At the state and national level, it involves groups such as the Children's Environmental Health Network, Commonweal, the Alliance for a Healthy Tomorrow, Physicians for Social Responsibility, and the Trust For America's Health. These organizations have helped shape what is increasingly

being termed the “environmental health movement,” and they offer a perspective on environmental health that incorporates concerns about the underlying industrial and governmental practices of our society. They often work in a multisectoral framework, arguing that fundamental change can only come if we reform and restructure industry, transportation, urban development, neighborhood renewal, public policy, scientific practice, and democratic participation.

The legacy is, of course, a massive challenge to state status quo of corporate pollution and inadequate governmental regulation, but also a new definition of “community” that incorporates many elements of social change.

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