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Environmental Justice in Canada – It Matters Where You Live

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Environmental Justice in Canada – It Matters Where You Live

1. Introduction

Where you live matters. This self-evident truth is the basis of our everyday lived experience. It is also the conclusion of decades of research and policy-making. Psychologists and sociologists tell us that we can forge lifelong social networks in our childhood neighbourhoods. Our socio-economic success, too, can be predicted by the relative standing of those neighbourhoods. And as adults, we know only too well that municipal and social service provision – both quantity and quality – are tied to where we live. The list goes on.

Adding to these insights is the environmental lens, growing slowly from the 1960s and now front-and-centre in the public's consciousness. Environmental quality is often poor in disadvantaged communities. Years of research and hundreds of studies bear this out. So overlaid on our concern about the environment is a nascent concern with environmental justice – a question of fairness in the distribution of "environmental bads."

Local communities faced with noxious environments voice these concerns. However, our social obligation is to address these issues even when we are not immediately affected ourselves. This leads us to ask: what is environmental justice and why does it matter? What can citizens, researchers, business and policy-makers do to both raise our awareness of and address environmental justice in decision-making? We answer these questions here and think about related experiences and ways forward to sustainable *and* just policy-making.

2. A Rising Tide

2.1 Environmental Justice Concepts

Clues to the importance of the environment to the public are all around us. Canada's fall 2008 federal election campaign pivoted largely on an "economy versus environment" conundrum. A shift toward the latter was untenable under a cloud of global financial crisis. Nonetheless, that the environment figured so prominently in a leading contender's election platform is a sign of the times. In early 2008, British Columbia introduced Canada's first carbon tax against loud debate and protest that is still simmering but becoming more accepted all the time. And recently (November 3), the *Toronto Star's* energy reporter Tyler Hamilton mused that the Premier of Ontario's reading of *Hot, Flat and Crowded* by *New York Times* columnist Thomas Friedman may be a sign that the province is thinking seriously about green investments. Perhaps the most significant recent landmark is the January 2007 International Panel on Climate Change report in which the world's leading scientists and policy-makers presented two-pronged evidence that global climate change is a reality and, equally important, that it is anthropogenic – human induced – in nature. Canadians have clearly become very concerned about the environment: in CPRN's *Connecting with Canadians* conversations over the past year about key challenges facing the country, the environment consistently emerged as one of the top concerns.

What is the effect of this elevated environmental sensibility? In simple terms, we are growing more concerned all the time about climate change as well as air pollution, water quality, biodiversity, waste management and the northern ecology, to name a few. Social theorists (Giddens, 1990; Beck, 1992) tell us that we are growing more reflective, uneasy and willing to act upon hazards of the modern world even if these hazards are integral to our economies, rising living standards and quality of life. In *Risk: The Science and Politics of Fear*, Dan Gardner shows that Americans very much regard environment in their evolving perceptions of risk, development and quality of life. In a similar vein this paper is aimed at setting the stage for how we may begin to engage Canadians on the question of environmental justice (EJ).

By origin, EJ is an American social movement and research stream that is now budding in Canada and elsewhere. The fundamental question of EJ is whether environmental hazards are concentrated in communities marked by low socio-economic status (SES, as indicated by income, educational attainment, wealth, or other indicators of advantage/disadvantage). The concept infers a lack of equity or fairness because disadvantaged communities:

(1) do not share equally in the production and consumption sectors that raise living standards and quality of life;

(2) and yet, ironically, they bear the lion's share of the unintended but important "side-effects" of the production and consumption sectors such as air pollution.[1]

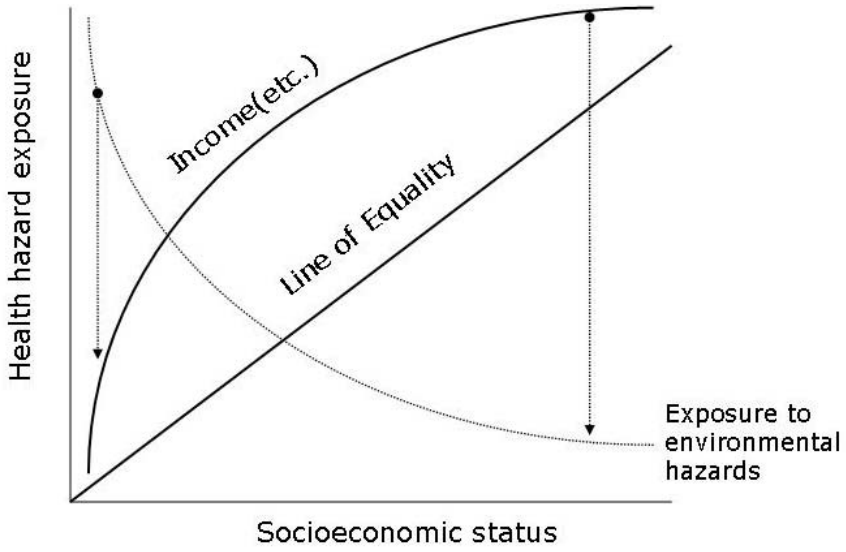
Figure 1 depicts the conceptual basis of environmental injustice that is now supported by hundreds of studies on a range of issues in the United States and increasingly in Canada and elsewhere. With each step up the socio-economic ladder we see concomitant decline in health hazard exposure. In income terms, we see with empirical evidence that higher status is protective of exposure to environmental health hazards and negative health impacts.

As the literature has developed in the United States, a number of key and often contested concepts have emerged. The first is whether disproportionate exposure to environmental health hazards is conditioned more by "race or class." In *Faces of Environmental Racism*, Westra and Lawson (2001) ask the "race or class" question to begin their overview of the literature and argue that race is the more important identity marker (for similar conclusions see Bryant and Mohai, 1993; Bullard, 1993; Hofrichter, 1993). Others ask how it is possible to separate low social status from race in the US context.

Related to the race or class debate, largely due to the role of the housing market as a systemic sorter of individuals and communities, is the "chicken or egg" polemic. On the one hand, hazards may concentrate disproportionately in existing communities of least resistance. On the other, hazards suppress land values making properties affordable to those of lower status. In this respect, Been (1993) asked "what's fairness got to do with," arguing that environmental injustice reflects the natural evolution of the land market: that locally unwanted land uses (LULUs) create affordable accommodation in proximate real estate.

[1] Though as reviewed below some have researched intentional community targeting, dispelling the myth in some instances of "unintended" externalities.

Figure 1. Schematic of Environmental Injustice



Note: Adapted from Buzzelli and Jerrett (2007).

In contrast, Pulido (1996) has made the point that wider structural forces, such as racism, account for both low status communities and technological hazards. From this point of view, residential "choice" is an abstraction. Some have sought more direct analysis of the chicken or egg question. Hamilton (1995) demonstrates econometrically that existing commercial hazardous waste facility expansion across the United States is closely associated with communities composed of racial minorities. Surely residents of Warren County, NC, as noted below, would concur that environmental injustice is not merely the outcome of market forces spatially allocating residents and hazards.

Finally, then, we come to the core concept of justice itself. Both in the research literature and the social movement in the United States, the term "justice" signifies a particular concern with environmental *health* hazards. Environmental economics, for example, has a long-standing interest in environmental "equity" although health is only one of several concerns over environmental disbenefits.

Instead the term "justice" reflects a concern over the (potential) health effects of technological hazards. Questions of norms and fairness signal the politically charged – and perhaps politicized – nature of health within the EJ discourse. Burger (1990) noted this in arguing that to some extent environmentalism is fuelled by the perceived or real impacts of environmental change on human health rather than environmental stewardship per se. Indeed, this may explain why sometimes scientifically "weak" study designs in early EJ research could be used for claims-making and policy development in the United States. What makes the EJ movement unique is the novel focus on questions of environment *and* health alongside issues of economic and social justice (Taylor, 2000).

2.2 What EJ Research Says

Some attribute the spark of EJ mobilizing and research to the Love Canal (Niagara Falls, New York) disaster of 1978. There, after years of toxic waste dumping, heavy precipitation leached chemicals into soils and nearby homes and forced emergency measures including evacuation (Fletcher, 2003). Joining up with a civil rights movement already in full swing, Love Canal raised public awareness and galvanized the anti-toxics movement. EJ gained further momentum in 1982 when rural Warren County (North Carolina), primarily a poor African-American community, was confirmed as the site for a toxic dump to store soil that had been illegally contaminated with PCBs (Goldman, 1996). Reaction was immediate and the images all too familiar: protests were followed by lawsuits and finally in 2004 site decontamination work commenced.

These incidents not only mobilized communities. They also activated substantial and still flourishing research literature. Harvey White (1998) provided an early summary of EJ research highlighting a range of local issues amongst disadvantaged communities in the United States, including pesticide use, air pollution, children's blood lead levels, toxic fish (where communities rely on local fishing), hazardous waste facilities, hazardous releases (air and groundwater) and facility siting. The literature has also grown beyond the United States including emergent research in Australia, Canada, the United Kingdom and elsewhere (Jerrett et al., 2001; Buzzelli et al., 2003; Lloyd-Smith and Bell, 2003; McCleod et al., 2000; Brainard et al., 2002; Mitchell and Dorling, 2003).

As the literature continues to grow, there are two critical shortcomings that are only recently being addressed. The first deals with specific methodological shortcomings in the ways in which environmental hazards are "assigned" (as in the formal epidemiologic subdiscipline of exposure assessment) to individuals and communities. Though the details are less important here, this gap in the literature pivots on what is often a lack of reliable environmental monitoring data (McMaster et al., 1997; Sheppard et al., 1999; Bowen, 2001; Bolin et al., 2002; Buzzelli and Jerrett, 2003). The second blind spot is that formal risk assessment is all too rare in EJ research, in part because we lack environmental measurements. Literature searches show that the preponderance of EJ research lacks health effects analyses even where possible (see http://geography.uwo.ca/faculty/buzzelli/pwias_www/).

However, there has been progress. Some researchers have introduced health effects models (Rogers and Dunlop, 2006; Finkelstein et al., 2005; Wheeler and Ben-Shlomo, 2005) and new exposure assessment/analytic methods (e.g. McConnell et al., 2006; Mohai and Saha, 2006; Mennis and Jordan, 2005; Harner et al., 2002). Research relating to transportation exposures has perhaps proceeded furthest. Apelberg et al. (2005) analyzed associations between the US EPA's National Air Toxics Assessment (NATA) and census tract socio-economic data in Maryland and found that cancer risk was greatest for roadsource emissions in low-income and racial minority areas. Similarly, studies in southern California (Morello-Frosch et al., 2001; Pastor et al., 2005) have used emissions inventories (including NATA) to assess the health impacts of a range of sources, reporting mobile/transportation sources as most important for lifetime cancer risk, but especially for racial minorities. These results, they argue, point to the need for land use and public policy development on transportation emissions to reach beyond obvious large-facility emissions. The research record is growing all the time.

The 20th anniversary of a landmark study, *The Commission for Racial Justice*, published by the United Church of Christ, was marked in 2007 (UCC, 1987).[2] The US General Accountability Office published its own explosive study in 1983, *Siting of Hazardous Waste Landfills*, and shortly following the UCC study came one of the most famous titles in the EJ literature, *Dumping in Dixie*, by Robert Bullard (1990). Accordingly, the Environmental Justice Resource Centre at Clark Atlanta University commissioned a 20th anniversary follow-up to the UCC study titled *New Toxic Wastes and Race at Twenty* (Bullard et al, 2007; see also www.ejrc.cau.edu/TWARTFinal.htm). Updating the *Commission* with year 2000 US census data, pollutant data and geographic information systems (GIS), the study finds, for example, that race – more than income and property values – remains the most important predictor of the location of hazardous waste facilities in the United States. From the original *Commission*, we read that "people of colour were twice as likely as Whites to live in a community with a commercial hazardous waste facility and three times as likely to have multiple facilities." These kinds of summary statements, no matter how methodologically weak, are politically very powerful.

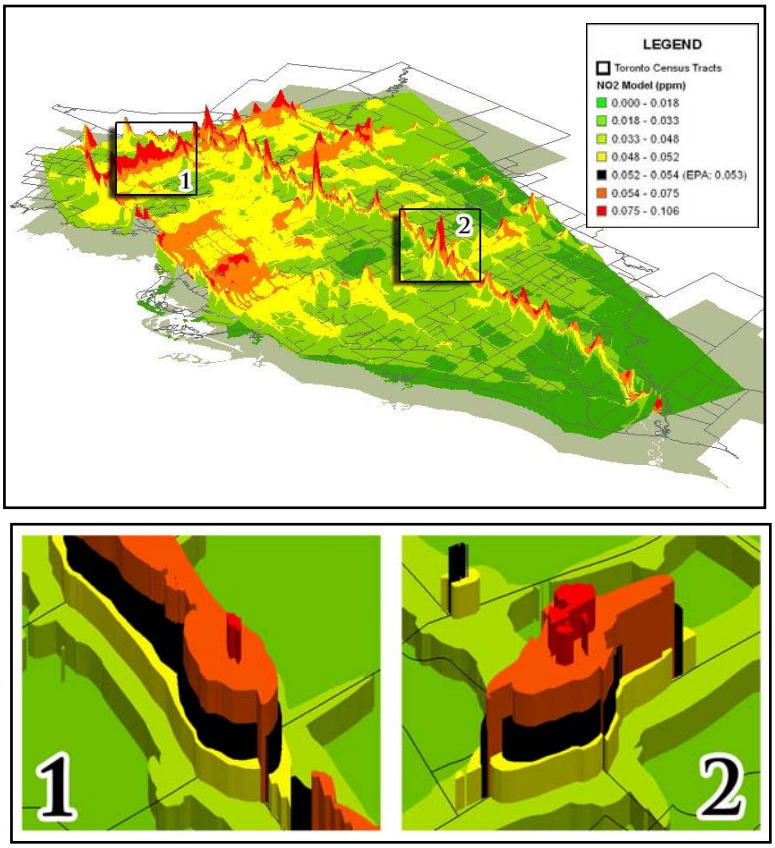
What about research in Canada? The track record is small but growing and, as we might expect, does not always conform with US research. Studies of air pollution exposure in Hamilton show that neighbourhoods marked by family status (lone parents) and low education (less than grade nine) bear most of that city's ambient pollution exposure (Buzzelli et al., 2003).

One study shows that policies to reduce industrial emissions have done little to narrow the range of exposures between the best and worst neighbourhoods over time. Another study focusing explicitly on "race," to compare directly with US research, found that blacks are not systemically located in the housing market in relation to ambient air pollution (Buzzelli and Jerrett, 2004). However, the Latin-American immigrant population is indeed spatially correlated with poor ambient air quality. Korean immigrants, typically entering Canada with higher SES, live in the cleanest neighbourhoods thereby turning the US notion of environmental injustice for racial minorities on its head.

In a final Canadian example, Toronto, the geography of susceptibility and exposure to air pollution is subtle but distinct in relation to major transportation corridors (Buzzelli and Jerrett, 2007). Figure 2 evokes the issue of environmental monitoring. Based on dense spatial sampling, it shows that the micro-geographies of exposure are more nuanced, consistently high and yet often hidden from view in standard monitoring infrastructure. Substantively this study found that neighbourhoods marked by low education, lone parents and low incomes were more likely to have higher ambient NO_2 (nitrogen dioxide) exposure. NO_2 is a traffic-related pollutant associated with respiratory illness particularly among children and the elderly. This suggests a possible double jeopardy for lower SES members of those cohorts. Thus the Canadian literature, although to now focusing very much on air pollution, is growing. In general we have more nuanced evidence of environmental injustice but nonetheless clear signals that this is not a uniquely American phenomenon.

[2] Environmental racism, a term coined by Dr. Benjamin Chavais, lead author of the UCC Commission, is equivalent to environmental justice but prioritizes the role of race and racism in conditioning community exposure to hazards.

Figure 2. Local Traffic-Related Nitrogen Dioxide in Toronto, 2002



Source: Adapted from Buzzelli and Jerrett, 2007.

There are other examples, in particular, the ongoing concern of environmental quality on First Nations' reserves. A recent example is that of contaminated drinking water in the Cree community of Kashechewan, Northern Ontario. In late 2005, it was revealed that raw sewage was being pumped into drinking water supplies in the community. Prompted ultimately by the discovery of deadly E. coli, about half of the community's 1,900 residents were temporarily evacuated. This is but one small example of a legacy of deplorable environmental (and more broadly social, economic and living) conditions faced by Canada's First Nations. It is a source of scorn from the international community; shame for Canada. EJ certainly characterizes this legacy even if research is not labelled as such.

In a similar vein, research on Canada's "Love Canal," the Sydney Tar Ponds, has not invoked the rubric of EJ though it too fits the bill. There are now well over 200 epidemiological studies of the health impacts of the Tar Ponds. After several decades of steel manufacturing and coking operations, the Muggah Creek in Sydney had, by the 1970s, become contaminated with the chemical by-products of these activities including polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). While a range of epidemiological studies cannot point directly to any particular activity due to uncertainty surrounding the source and speciation of

particular hazards (Goodarzi and Mukhopadhyay, 2000), local residents in Sydney exhibit cancer rates far above national averages and nearby communities. For example, cervical cancer in women in Sydney is 134 percent greater than the provincial average (itself above the national average). A range of other diseases associated with ambient exposures are also more apparent, including Alzheimer's, MS and birth defects (Barlow and May, 2000). The issue is clearly of ongoing importance to the local community and to policy-makers and, as we discuss below, the policy lessons are instructive (see Barlow and May, 2000). What this says is that examples of EJ abound in Canada too, even if not explicitly titled as such.

What is critical in this paper is that mounting evidence of environmental injustice indicates that reducing environmental hazards does not necessarily reduce environmental inequity between the least- and most-well-off communities. In other words, a sustainable economy and environment is not necessarily a just one. EJ is primarily about distributive justice rather than overall pollution reduction. The movement focuses on horizontal or intragenerational equity more than vertical or intergenerational equity. This would appear to put EJ at odds with the central tenet of sustainability, known popularly as development today that does not compromise benefits to future generations. Not surprisingly though, the EJ counter-argument is that remediation for future generations does not help disadvantaged communities who presently shoulder a disproportionate burden of the modern economy's "regrettable necessities," as Aldo Leopold once called them.

Policy development in the EJ arena fits poorly into existing policy paradigms. EJ does not easily conform to traditional "tax or spend" approaches that are fundamental to social policy. In the Canadian context, social program development in early post-war decades was built upon a foundation of progressive taxation. The social transfer, while wavering amongst federal and provincial governments in recent decades, nonetheless "evens the playing field" when it comes to social inequalities, health outcomes and well-being (Ross et al., 2000). Universal health care, though not unproblematic, is still central to the Canadian identity and collectivist ethos of fairness and social welfare/justice. EJ, on the other hand, is less clearly redressed through taxation: we do not account for nor measure "environmental deficits" in the way we do socio-economic inequalities between individuals, households, neighbourhoods and communities. At this moment of unpriced, spatially uneven and often unfair environmental quality, what matters most is to actively and meaningfully engage communities in policy discourse. We need to listen to their stories for policy adoption, incorporate their ideas into policy development and ultimately work with them in implementation.

3. EJ Policy – Mobilizing Communities

The late Robert Harney, eminent Canadian historian, once wrote that despite the lore of Canadian exceptionalism, immigrant and ethnic experiences in Canada dispel the notion of a "peaceable kingdom"; we scarcely differ, despite our beliefs, from the American experience of ethnic and minority relations.

As the Canadian research track record on EJ grows, Harney's insight grows more relevant. In a fundamental sense, what can we do about it? Ironically, Canadian folklore is suggestive: Canadiana is full of fairness and equity lore. The quintessential Canadian Margaret Atwood, first in *Good Bones* (1992) and this year in *Debt and the Shadow Side of Wealth*, plies her trade in short stories themed on fairness and collective social obligations. Can we harness this spirit in EJ policy-making? The scale of the challenge belies a simple answer though the question is motivated by the desire of local communities to see what is right and fair.

3.1 The US Experience

What we know from the American experience is that EJ policy at the national level is largely symbolic and, in spite of a long research track record, precious few examples of local engagement and mobilizing exist. When President Clinton signed Executive Order 12898 ("Federal actions to address environmental justice in minority populations and low-income populations") in 1994, it was a landmark. Advocacy and research had apparently made their mark. The Order requires that: (1) federal agencies identify disproportionately high and adverse human health or environmental effects on minority and low-income populations that may result from federal government programs, policies, and activities, and (2) the government take action to address such disparities. Indeed the prior year, in 1993, the US Environmental Protection Agency had already developed its own EJ program within its Compliance and Enforcement division. This EJ program incorporates the National Environmental Justice Advisory Council (NEJAC), granting programs and an internship program. These national programs and policy changes, important as they are, remain symbols at best.[3]

3.1.1 San Francisco

At the local level, by contrast, there are nuggets of meaningful community engagement, advocacy and mobilizing for EJ. In San Francisco, beginning in 1993, stakeholder communities initiated a process to develop sustainable planning principles for the region (www.sustainable-city.org/index.htm). This included over 400 volunteers and thousands of hours of consultations with environmental NGOs, private business, local universities and, of course, the city itself. Modelled after the European Community's Agenda 21 Implementation Plan (UN Strategy for sustainable development), the goals and objectives of *Sustainable City* became official policy of the City and County of San Francisco in 1997 alongside the city's new (1996-97, ongoing) Department of the Environment. This was a first amongst US municipalities.

[3] Interview with Dr Devon Payne-Sturges, Assistant Center Director for Human Health, National Center for Environmental Research, US EPA.

As a result, EJ was infused in San Francisco policy as a cross-cutting theme aimed at specific environmental issues, broadly defined,[4] and intersecting with policy on economy and economic development, municipal expenditures, public information and education and risk management. For example, in Bayview-Hunters Point district, residents who are primarily low-income African-Americans were working with the Public Health Department to undertake an environmental assessment for a controversial proposed power plant planned in the 1990s. The district is already one of the most polluted in the region.

Other local issues relate to alternative levels of city service provision (such as waste collection) and lead paint exposures. Most important, the guiding principle for inclusion of EJ in *Sustainable City* was less reaction to local issues but the need to incorporate ideals of public participation in planning, particularly among under-represented groups such as racial(ized) minorities. To date, the crown jewel of the department's EJ program is its grants-in-aid funding to communities to address pollution, energy and public health concerns (initiated in 2000, ongoing). Over nine million dollars have been granted to 25 different projects. Among the results is a new (2005) Bayview-Hunters Point Farmers' Market that provides low-income residents with regular local access to fresh produce. This and other programs have received a generally positive review in an independent audit of the program's operation and community impacts (TechLaw, Inc., 2006).

3.1.2 New Mexico – SouthWest Organizing Project

A second example is SWOP – the well known SouthWest Organizing Project (www.swop.net/), a multi-issue grassroots organization established in 1980 in New Mexico. Its mission was to "empower communities to realize racial and gender equality and social and economic justice." SWOP's members and organizers come from the Chicano (indigenous Mexicans), Native American, Mexican immigrant and smaller African-American and Asian/Pacific Islander populations of New Mexico. SWOP's website chronicles a history of mobilization including voter registration drives, development of a Community Environmental Bill of Rights and a Regional Activist Dialogue, which brought together activists from eight southwestern states. In 2004, SWOP helped plan the New Mexico Environment Department. Environmental justice listening sessions were held in four communities. Input gathered from these sessions informed the development of an EJ legislative bill, called the *New Mexico Healthy Communities Act*. Several other examples are listed around such issues as drinking water quality, local economic development and citizen representation.

Implicit in these examples are the overlapping themes within the scope of SWOP's activities, stated on its website as public/community participation, economic justice and, of course, EJ. It is stated:

> Development in New Mexico is heavily influenced by outside forces that exercise great political control in the State. Since the 1840s, extraction type industries – mining, cattle ranching, timber, nuclear weapons development and now "high tech" electronics – have exploited our natural, labour and economic resources… People of color have paid the greatest price for this history. New Mexico is one of the poorest states in the Union and people of color are the majority (www.swop.net/, accessed 17 May 2007).

[4] These include: air pollution; biodiversity; energy, climate change and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces and streetscapes; solid waste; transportation; water and wastewater.

SWOP's history is long and its advocacy and mobilizing activity are widely recognized. Perhaps its best known example is that of the "bucket brigade," a community-organized project in which residents were shown how to build and operate makeshift air pollution monitors to track emissions of nearby manufacturing in Corrales, New Mexico. The monitoring worked and the community received an anonymous donation for a proper scientific instrument that is now run and reported in Scorecard, an independent pollution information website.

4. Constructing an EJ Policy Framework

4.1 Canadian Context

Draper and Mitchell (2001: 96) argue that "in Canada, relatively little policy discussion explicitly linked to environmental justice has occurred ... political and private sector leaders in Canada generally have not taken strong positions related to environmental justice issues." Seven years later, only minor inroads exist and we have evidence that is more suggestive of the receptivity and need for EJ policy development.

West Coast Environmental Law, WCEL (www.wcel.org/), is a long-standing community-based organization. It offers advice and advocacy services for local communities in British Columbia. WCEL services include the "Environmental Citizenship" and "Building Bridges" outreach programs that incorporate EJ and connect them with local Asian communities who can learn about and take action on issues despite language barriers. These kinds of services are essential to plug local concerns into wider policy development and implementation.

All of the examples above speak to obligations to see what is right and fair by and for local communities facing EJ challenges. If environmental policy is to be responsive and inclusive, it must be informed at least in part by EJ concerns and principles. Accordingly, this paper recommends a series of cumulative steps needed to build an EJ framework in order to connect local communities with policy adoption, development and ultimately implementation.

4.2 Policy Framework

1. EJ as a policy concern – adoption

Policy adoption is necessarily an interplay of power and politics though it must be broad-based, acceptable to the public and, most of all, principled. EJ hits all of these notes. For instance, we know that disadvantaged communities face disproportionate exposure to hazards and compromised health status – a double jeopardy. Yet environmental health perception research shows us that policy can "over-respond" to more connected and wealthy communities because they are resourced and engaged; they leverage resources in spite of living in relatively healthy environments.

Local communities want to know how they fare. For those in bleaker neighbourhoods and regions, we can make the principled argument as we do in social policy that they ought not be bypassed. For policy adoption, what is needed in the first instance is messaging and awareness. Formal research is key but not sufficient. Also needed are community dialogues where we "test

the waters"; tap the as yet unknown demand for EJ in environmental policy- and decision-making. Falling somewhere between extant formal research and advocacy, community dialogues would surely shine a new and bright light on new priorities for environmental policy.

2. Policy development – community information infrastructure and environmental surveillance

As discussed, EJ research can be constrained by environmental monitoring that is typically sparse and prohibitively expensive, particularly for disadvantaged communities. As a result they often "fly below the radar." What we need is an information development and sharing infrastructure aimed specifically at disadvantaged communities. In a classic example from environmental health, a multi-method study of landfill siting in Hamilton, Ontario, found that residents were more concerned with their lack of inclusion in the planning process than with more direct environment and health linkages (c.f. Elliott et al., 1993; Eyles et al., 1993). Environmental Defence Canada (2008) recently reported that residents of Sudbury, Ontario, want to provide input on, and have some control over, environmental remediation as a result of local extractive and manufacturing, namely elevated levels of lead, nickel and arsenic in soil, air and locally-grown fruits and vegetables. These examples illustrate that local communities want and ought to be on the top rung of the fabled "ladder of citizen participation."

At this nascent stage of EJ discourse in Canada, policy development is a question of leadership. Coordination is required amongst municipal, regional, provincial and federal governments to identify and to be responsible for outreach and engagement. Provincial and territorial governments are arguably best placed to lead their jurisdiction over health and environment.

Not unlike California EPA's EJ Program, provinces and territories ought to consider EJ as a cross-cutting principle. For new developments and siting processes, Impact Assessment typically includes provisions for community consultation and, to a lesser extent, devolved control. EJ is about policy development with, by and for local communities so that fears, insights and aspirations are incorporated in decision-making going forward.

The earlier examples of SWOP and *Sustainable City* are again instructive. What both demonstrate is, first, that citizen inclusion and participation is necessary to achieve EJ ideals. Second, EJ is an inter-sectoral movement. Sustainability in San Francisco's planning could not be achieved without due consideration of social and spatial inequities, a point also made by leading EJ researchers (e.g. Agyeman et al., 2003; Dobson, 2003). Third, these two cases also reveal the uniqueness of the EJ movement: that it brings together stakeholders in a new kind of movement. According to Taylor (2000: 42), EJ "…is the first paradigm to link environment and race, class, gender and social justice concerns in an explicit framework." If EJ is indeed cross-cutting, then it can contribute to, and leverage, other priorities, most obviously health. Indeed one could argue that provincial governments, among others, have much to gain – even in narrow terms of inter-program efficiencies and political capital – from leadership on an inter-sectoral community-based EJ strategy.

3. EJ policy implementation over the longer-term

Adoption and development of a framework for addressing EJ, steps 1-2, are necessary before implementing action to redress environmental injustice. Implementation is likely the most politically-charged policy stage. We have effectively been talking about a place-based approach to engagement that fits uneasily into conventional aspatial policy frameworks (Bradford, 2005). The classic hurdle in place-based policy is that it makes explicit *spatial rather than social* redistribution.

We are accustomed to progressive taxation. We know and accept, broadly speaking, some level of rebalancing social inequities with social services, income supplements and other forms of social welfare. Disagreement here is usually a matter of degrees only. The main point is that there is no particular *place* to which redistribution is tied. Perhaps the best example of explicitly spatial redistributive policy is federal equalization, which conjures regular and heated debate. But even this is different from environmental policy in that it is a redistribution of resources *for social programs*. *Environmental* redistribution on the other hand, is not as straightforward. In terms of policy adoption and development we are faced with the difficulty of the perception – perceived or real – of over-responding to disadvantaged communities in research, engagement and inclusion, an outcome surely exacerbated by what was noted earlier; that high-SES communities carry inflated expectations of policy responsiveness. Thus we are likely to see, as classical environmental economics warns us, a reaction from amongst more upwardly mobile communities who will feel less-well-served. Though implementation is some way off, we know this challenge looms if EJ is to be translated into meaningful place-based policy for under-resourced communities.

Finally, on a more positive note, what these challenges point to is that EJ will progress once the grassroots connect with leadership. The challenge of implementation can be overcome when the public and leaders understand that EJ must be on the public policy agenda. This is a prerequisite if modern societies are to have a meaningful record of social and environmental progress. A joining-up of priorities will follow when principled environmental leadership recognizes EJ as a legitimate issue that needs meaningful attention. When that happens, local communities will be only too ready to get involved.

Bibliography

Agyeman, J., R. Bullard, and B. Evans. 2003. "Introduction: Joined-up Thinking: Bringing Together Sustainability, Environmental Justice and Equity." In J.Agyeman, R. Bullard, and B. Evans (eds.). *Just Sustainabilities: Development in an Unequal World (Urban and Industrial Environments).* Cambridge, MA: MIT Press. pp. 1-18.

Barlow, M., and E. May. 2000. *Frederick Street: Life and Death on Canada's Love Canal*. Toronto: HarperCollins.

Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. New Delhi: Sage.

Been, V. 1993. "What's Fairness Got to Do with It? Environmental Justice and the Siting of Locally Undesirable Land Uses." *Cornell Law Review* Vol. 78: 1001-1036.

Bolin, B., Nelson, A., Hackett, E., Pijawka, D., Smith, C., Sicotte, D. et al. 2002. "The Ecology of Technological Risk in a Sunbelt City." *Environment and Planning A* Vol. 34: 317-339.

Bowen, W. 2001. *Environmental Justice through Research-Based Decision-Making*. New York: Garland.

Bradford, N. 2005. *Place-Based Public Policy: Towards a New Urban and Community Agenda for Canada.* Research Report F|51. Ottawa: Canadian Policy Research Networks.

Brainaird, J., Jones, A., Bateman, I., et al. 2002. "Modelling Environmental Equity: Access to Air Quality in Birmingham, England." *Environment and Planning A* Vol. 34: 695-716.

Bryant, B., and P. Mohai. 1993. *Race and the Incidence of Environmental Hazards*. Boulder: Westview Press.

Bullard, R. 1990. *Dumping in Dixie: Race, Class and Environmental Quality*. San Francisco: Westview Press.

_____. 1993. *Confronting Environmental Racism: Voices from the Grassroots*. Boston: South End Press.

Bullard, R., P. Mohai, R. Saha, and B. Wright. 2007. *New Toxic Wastes and Race at Twenty: Grassroots Struggles to Dismantle Environmental Racism in the United States.* New York: United Church of Christ.

Burger, E.J. 1990. "Health as a Surrogate for the Environment." *Daedalus* Vol. 119, No. 4 (Fall): 133-153

Buzzelli, M., and M. Jerrett. 2003. "Comparing Proximity Measures of Exposure to Geostatistical Estimates in Environmental Justice Research." *Environmental Hazards* Vol. 5: 13-21.

_____. 2004. “Racial Gradients of Ambient Air Pollution Exposure in Hamilton, Canada.” *Environment and Planning A* Vol. 36: 1855-1876.

_____. 2007. “Geographies of Susceptibility and Exposure in the City: Environmental Inequity of Traffic-Related Air Pollution in Toronto.” *Canadian journal of regional science* Vol. 30, No. 2: 195-210.

Buzzelli, M., M. Jerrett, R. Burnett, and N. Finkelstein. 2003. “Spatiotemporal Perspectives on Air Pollution and Environmental Justice in Hamilton, Canada, 1985-1996.” *Annals of the Association of American Geographers* Vol. 93: 557-573.

Dobson, A. 2003. “Social Justice and Environmental Sustainability: Ne’er the Twain Shall Meet?” In J. Agyeman, R. Bullard, and B. Evans (eds.). *Just Sustainabilities: Development in an Unequal World*. Cambridge, MA.: MIT Press. pp. 83-98.

Draper, D., and B. Mitchell. 2001. “Environmental Justice Considerations in Canada.” *Canadian Geographer* Vol. 45: 93-98.

Elliott, S.J., S.M. Taylor, S. Walter, D. Stieb, J. Frank, and J. Eyles. 1993. “Modelling Psychosocial Effects of Exposure to Solid Waste Facilities.” *Social Science and Medicine* Vol. 37: 791-805.

Environmental Defence Canada. 2008. *Sudbury Human Health Risk Assessment Briefing*. Toronto: Environmental Defence Canada. Accessed at www.toxicnation.ca/node/194.

Eyles, J., Taylor, SM., Johnson, N., and Baxter, J. 1993. “Worrying about Waste: Living Close to Solid Waste Disposal Facilities in Southern Ontario.” *Social Science and Medicine* Vol. 37: 805-812.

Finklestein, M., M. Jerrett, and M. Sears. 2005. “Environmental Inequality and Circulatory Disease Mortality Gradients.” *Journal of Epidemiology and Community Health* Vol. 59: 481-487.

Fletcher, T.H. 2003. *From Love Canal to Environmental Justice: The Politics of Hazardous Waste on the Canada-US border*. Peterborough, ON: Broadview Press.

Giddens, Anthony. 1990. *Consequences of Modernity*. Cambridge: Polity Press.

Goldman, B. 1996. “What Is the Future of Environmental Justice?” *Antipode* Vol. 28: 122-141.

Goodarzi, F., and M. Mukhopadhyay. 2000. “Metals and Polyaromatic Hydrocarbons in the Drinking Water of the Sydney Basin, Nova Scotia, Canada: A Preliminary Assessment of Their Source.” *International Journal of Coal Geology* Vol. 43: 357-372.

Hamilton, J. 1995. “Testing for Environmental Racism: Prejudice, Profits, Political Power?” *Journal of Policy Analysis and Management* Vol. 14: 107-132.

Harner, J., K. Warner, J. Pierce, and T. Huber. 2002. "Urban Environmental Justice Indices." *Professional Geographer* Vol. 54: 318-331.

Hofrichter, R. 1993. *Toxic Struggles: The Theory and Practice of Environmental Justice*. Philadelphia: New Society Publishers.

Jerrett, M., R.T. Burnett, P. Kanaroglou, J. Eyles, N. Finkelstein, C. Giovis, and J.R. Brook. 2001. "A GIS-Environmental Justice Analysis of Particulate Air Pollution in Hamilton, Canada." *Environment and Planning A* Vol. 33, No. 6: 955-973.

Lloyd-Smith, M., and L. Bell. 2003. "Toxic Disputes and the Rise of Environmental Justice in Australia." *International Journal of Occupational and Environmental Health* Vol. 9: 14-23.

McCleod, L., L. Jones, A. Stedman, R. Day, I. Lorenzi, and I. Bateman. 2000. "The Relationship between Socio-Economic Indicators and Air Pollution in England and Wales: Implications for Environmental Justice." *Regional Environmental Change* Vol. 1: 78-85.

McConnell, R., K. Berhane, L. Yao, M. Jerrett, F. Lurmann, F. Gilliland, et al. 2006. "Traffic, Susceptibility, and Childhood Asthma." *Environmental Health Perspectives* Vol. 114: 766-772.

McMaster, R., H. Leitner, and E. Sheppard. 1997. "GIS-Based Environmental Equity and Risk Assessment: Methodological Problems and Prospects." *Cartography and Geographic Information Systems* Vol. 24: 172-189.

Mennis, J. and L. Jordan. 2005. "The Distribution of Environmental Equity: Exploring Spatial Nonstationarity in Multivariate Models of Air Toxic Releases." *Annals of the Association of American Geographers* Vol. 95: 249-268.

Mitchell, G., and D. Dorling. 2003. "An Environmental Justice Analysis of British Air Quality." *Environment and Planning A* Vol. 35, No. 5: 909-929.

Mohai, P., and R. Saha. 2006. "Reassessing Racial and Socioeconomic Disparities in Environmental Justice Research." *Demography* Vol. 43: 389-399.

Morello-Frosch, R., M. Pastor, and J. Sadd. 2001. "Environmental Justice and Southern California's 'Riskscape' – The Distribution of Air Toxics Exposures and Health Risks among Diverse Communities." *Urban Affairs Review* Vol. 36: 551-578.

Pastor, M., R. Morello-Frosch, and J. Sadd. 2005. "The Air Is Always Cleaner on the Other Side: Race, Space, and Ambient Air Toxics Exposures in California." *Journal of Urban Affairs* Vol. 27: 127-148.

Pulido, L., S. Sidawi, and R. Vos. 1996. "An Archaeology of Environmental Racism in Los Angeles." *Urban Geography* Vol. 17: 419-439.

Rogers, J., and A. Dunlop. 2006. “Air Pollution and Very Low Birth Weight Infants: A Target Population?” *Pediatrics* Vol. 118: 156-164.

Ross, N.A., M.C. Wolfson, J.R. Dunn, J.-M. Berthelot, G. Kaplan, and J. Lynch. 2000. “Relation between Income Inequality and Mortality in Canada and in the United States: Cross Sectional Assessment Using Census Data and Vital Statistics.” *British Medical Journal* Vol. 320: 898-902.

Sheppard, E., H. Leitner, R. McMaster, and H. Tian. 1999. “GIS-Based Measures of Environmental Equity: Exploring Their Sensitivity and Significance.” *Journal of Exposure Analysis and Environmental Epidemiology* Vol. 9: 18-28.

Taylor D. 2000. “The Rise of the Environmental Justice Paradigm: Injustice Framing and the Social Construction of Environmental Discourses.” *American Behavioral Scientist* Vol. 43: 508-580.

TechLaw, Inc. 2006. *Independent Evaluation of the Environmental Justice Grant Program.* San Francisco, CA: TechLaw, Inc.

UCC [United Church of Christ]. 1987. *Toxic Wastes and Race in the United States.* New York: United Church of Christ, Commission for Racial Justice.

USGAO [United States General Accounting Office]. 1983. *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities* Washington, DC: Government Printing Office.

Warner, K. 2002. “Linking Local Sustainability Initiatives with Environmental Justice.” *Local Environment* Vol. 7: 35-47.

Westra, L., and Lawson, B. 2001. *Faces of Environmental Racism: Confronting Issues of Global Justice (2nd ed.).* Oxford: Rowman and Littlefield.

Wheeler, B., and Ben-Shlomo, Y. 2005. “Environmental Equity, Air Quality, Socioeconomic Status, and Respiratory Health: A Linkage Analysis of Routine Data from the Health Survey for England.” *Journal of Epidemiology and Community Health*, Vol. 59, No. 11: 948-954.

White, H.L. 1998. “Race, Class, and Environmental Hazards.” In D.E. Camacho (ed.). *Environmental Injustices, Political Struggles: Race, Class, and the Environment.* Durham, NC: Duke University Press.

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