

## Environmental Justice and the Mississippi River Industrial Corridor

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Environmental justice is equitable distribution of the benefits and harms of human activity regarding the environment. Environmental injustice is the inequitable exposure to deleterious pollution based on socioeconomic status (Keller 2005). In the United States, sources of pollution such as manufacturing plants, toxic waste dumps, incinerators, and other industrial facilities are typically located in low-income neighborhoods, often African-American, Latino, and Native-American. Environmental injustice often entails a racial component, expressed by the common phrase "environmental racism" (ibid.).

Environmental injustice is a complex issue involving demography, geography, epidemiology, economics, and politics. Factors which cause or aggravate environmental injustice include zoning of residential with industrial areas (Richardson 1997), the intentional targeting by corporations of minority communities for hazardous materials facilities (Pellow 2004, p. 523), and the political weakness of minority communities to resist exploitation (Pastor, Sadd, and Hipp 2001). For example, in a report to the California Waste

Management Board by a private consulting firm, the authors observe: "All socioeconomic groupings tend to resent the nearby siting of major [toxic waste] facilities, but middle and upper socioeconomic strata possess better resources to effectuate their opposition. Middle and higher socioeconomic strata neighborhoods should not fall within the one-mile and five-mile radius of the proposed site" (Cerrell Associates 1984). Even the effectiveness of the use of bribery and corruption have been identified as considerations in hazardous waste siting (Pellow 2004, p. 521).

As a consequence, noxious facility siting is often occurs in low-income and minority areas (Bullard 1994). In Chicago, 92% of the city's approximately 1 million African-Americans live in racially segregated areas. One segregated area, the Altgeld Gardens housing project in southeast Chicago, is 70% African-American and 11% Hispanic (ibid., p. 13). Altgeld Gardens is encircled by municipal and hazardous waste landfills, sewage treatment plants, toxic waste incinerators, smelters, steel mills, chemical plants, and a paint factory. The co-location of Altgeld Gardens and industry can be traced to racists zoning decisions dating back to the 1920s (Grossman 1991). Collectively, the industrial facilities around Altgeld Gardens emit pollutants which are deleterious to health (Summerhays and Croke 1987). Between the 1920s and the 1970s, the city of Houston placed all of its landfills and 6 of its 8 incinerators in African-American neighborhoods (Bullard 1983). The zip-

code 90058, known as the nation's most polluted, lies in the middle of Los Angeles' largest African-American and Hispanic neighborhoods. In the one-square mile community, huge toxic-waste incinerators and dumps expose employees and neighbors to asbestos, lead, pesticides, polychlorinated biphenyl (PCB), and other hazardous materials (*Orange County Register* 1991).

Significantly, in the United States, awareness of environmental injustice as a serious ethical concern has its origins in the Civil Rights rather than the mainstream environmental movement. In 1982, the largely African American community of Warren County, the poorest county of North Carolina, fought a PCB disposal site in the spirit of grass roots activism (McGurty 2007). This event differed dramatically from the mainstream environmental movement, which has traditionally focused on wilderness legislation (Keller 2005).

Gradually, mainstream environmentalists became cognizant of the environmental racism and found common ground with civil rights activists, as evidenced by the 1993 roundtable discussion on environmental injustice organized by the Sierra Club (op. cit.). This cooperation between mainstream environmental and civil rights groups has taken the forms of technical advice, expert testimony, financial assistance, research, fundraising, and legal advice. Thus, for a growing number of civil rights and environmental activists alike, in order to take the issue of civil rights

seriously, the problem of environmental racism cannot be overlooked (Keller 2005).

The role of race in environmental injustice was highlighted in a landmark report by the United Church of Christ Commission for Racial Justice (1987). The study revealed that the most significant variable associated with the location of hazardous waste sites was race, and the greatest number of hazardous waste sites were located in minority communities. During the 1990s, the EPA began investigating allegations of environmental discrimination under the Civil Rights Act of 1964 (Bullard 1994, p. 15). In 1991, Delegates to the First National People of Color Environmental Leadership Summit drafted 17 "Principles of Environmental Justice" (op. cit.). In 1992 (Lavelle and Coyle) an influential legal analysis was published that found race, not income, was the determining factor in EPA enforcement of federal environmental law. According to the analysis, penalties levied against industries for violating environmental laws were 46% higher in white communities than in minority communities and that abandoned toxic waste sites in minority areas took 20 percent longer to be placed on the Superfund clean-up priority list than those in white areas (ibid.).

But issues of environmental injustice are not limited to issues of race. In Bhopal, India, a leak at a Union Carbide plant killed 4,000 people in 1984.

The only plant in the U.S. that produces methyl isocyanate, the deadly gas that caused the Bhopal tragedy was produced at Union Carbide's sister plant in Kanawha Valley, West Virginia (Murphy 1984). Local residents worried that Union Carbide and EPA officials were unduly sluggish in addressing community health concerns (Oder 1985). The area is predominantly Caucasian, demonstrating that environmental injustice is not just an issue of race but also of socioeconomic status.

Using as a fundament Title VI of the Civil Rights Act, which states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or actively receiving Federal financial assistance," in 1993 Congress passed the Environmental Justice Act (EJA), the Environmental Equal Rights Act, and the Environmental Health Equity Information Act. In 1994, President Clinton signed an executive order specifically aimed at addressing environmental injustice (Office of the President of the United States).

The issue of environmental injustice raises the classical causal conundrum: given the co-occurrence of two events, what is the connection of the two? Is one event the causal antecedent of the other, or the other way around? Or is there any causal connection at all, aside from the two events being simple

symptoms of some larger phenomenon? In terms of environmental injustice, are hazardous waste facilities located where they are because those communities have been singled out on account of their relative political weakness, or do lower-income people migrate to areas that just happen to be home to industry?

Sociological research on the causality between low income residence and industrialization has been mixed. Studies have found the primary demographic factors of areas with hazardous waste facilities are low-income, minority, and preponderance of rental property (Pastor, Sadd, and Hipp 2001, p. 15). Even so, some scholars have refrained from identifying low income residence as a causal antecedent to industrialization. Land amenable to industrial activity might be less desirable for residential purposes, so the two phenomena—lower income populations and industrialization—might be externally related to a third factor, the area itself (Mennis and Jordan 2005, p. 266). For instance, a swampy area may be amenable to industrial development due to the accessibility of barge and rail traffic, and unattractive to middle class and high income families due to humidity and mosquitoes. Hence some studies state that there is no clear temporal ordering of minority settlement with hazardous waste facility siting, or hazardous waste facility siting with minority settlement (ibid.).

Yet other demographic research has discerned a noticeable causal connection between minority populations and to hazardous waste facility siting: the disproportionate siting of hazardous waste facilities in minority areas is much greater than disproportionate minority relocation to areas of pre-existing hazardous waste siting (Pastor, Sadd, and Hipp 2001, p. 1). In other words, minorities attract hazardous waste facilities but hazardous waste facilities do not generally attract minorities (ibid., p. 18).

All of these conceptual currents convergence along an 85-mile stretch of the Mississippi River from Baton Rouge to New Orleans, officially known as the Industrial Corridor, disparagingly referred to as "cancer alley" (*Advocate* 1999). This "toxic gumbo," as locals call it (Richardson 1997), is a heavily industrialized area consisting of numerous oil refineries, scores of petrochemical plants, and hundreds of factories. According to the EPA's Toxic Release Inventory (TRI), tons of pernicious chemicals are released into the environment along the Industrial Corridor, many of them known carcinogens (McQuaid 2000).

The people who live in the towns and parishes that dot the river are mostly poor and black. As Monique Harden, co-director of Advocates for Environmental Human Rights, a nonprofit public interest law firm, has described the demography of the region: "Louisiana has only known two

forms of economic development: slave plantations and heavy industry” (Greenberg 2006), both exploitive of African-Americans. According to Harden, during the decades in which industrial facilities were beginning to be built along the Industrial Corridor (from the 1930s-50s), African-Americans did not have the right to vote and residents had no say in the location or operation of industrial installations (ibid., p. 35).

Not surprisingly, the area is heavily polluted and illustrates demographic differentials inherent to environmental injustice. Each year, 7 pounds of pollutants per person are released into the air in the U.S. The state of Louisiana averages 21 pounds per person, while some counties in Louisiana, such as St. James Parish around the town of Convent in the center of the Industrial Corridor, reach 2,277 pounds (Jackson and Bullard 1998). Out of the approximately 185 million pounds of toxic substances that are emitted into the environment each year in the state of Louisiana, 132 million pounds are emitted in this corridor (ibid.).

Anecdotal evidence suggests that noxious waste facilities along the Industrial Corridor cause cancer. A Baton Rouge physician has claimed that many of his asthma patients had not experienced respiratory ailments until they moved to the area, and symptoms disappeared when they moved away and reappeared when they returned (Koeppel 1999, p. 17). Another oncologist

who began practicing in Baton Rouge in the early 1990s said he saw far more cancer than he expected (ibid.). Florence Robinson, a Southern University biology professor who lives near Baton Rouge, has had 4 dogs die of cancer, noting that no other dogs from the same litters developed cancer —nor lived in Louisiana (Koeppel 1999, p. 16).

To Robinson, the inordinate incidence of cancer is informative. In March 1997, a barge capsized on the Mississippi River, sending a plume of toluene and benzene fumes over campus. Both chemicals are flammable and carcinogenic. After the incident, one student, Catherine Anthony, developed a red rash on her face and said that her health has been failing since the accident. "It seems like my future has ended," Anthony lamented (Kern 2001).

The epidemiological data, however, is ambiguous. Some studies suggest a higher incidence of cancer linked to environmental pollution on the Industrial Corridor. A study of 20 parishes in southern Louisiana found a statistically significant connection between drinking Mississippi River water and rectal cancer (Gottlieb et al. 1981). Another study found that people not employed by the petrochemical industry living within 1 mile of a plant were 4 times more likely to die of lung cancer than people not employed by the petrochemical industry living 2-4 miles away (Ferstel 1998).

St. Bernard Parish of metropolitan New Orleans has high cancer rates, particularly for lung cancer, according to Elizabeth "Terry" Fontham, dean of Louisiana State University (LSU) School of Public Health (Pope 2004).

Specifically, the cancer death rate in 1997 was 18% above the Louisiana's average and 22% above the national average (Correa et al. 2004).

Fontham has remarked that these elevated rates might be due to lifestyle, not pollution. Residents along the river tend to eat a Cajun diet laden with fat and sparse on fruits and vegetables, and also tend to smoke tobacco earlier and more during their lifetimes (Koeppel 1999, p. 17). This complication is enough for some epidemiologists to remain skeptical about any definitive link between industrial pollution and cancer (Pope 2004) or to dismiss environmental factors outright (McQuaid 2000).

A study funded by the Louisiana Tumor Registry (LTR), a state office, found that, taken as a whole, the cancer rates along the Industrial Corridor were normal: "Incidence rates for the Industrial Corridor are either similar to, or statistically significantly lower than, the combined rates for the [national rates] for most of the common cancers (prostate, breast, colon, and rectum) as well as for rare tumors such as brain and leukemias" (Chen et al. 1998, p. 165).

Naysayers dismiss such research as severely flawed science. "It tells me they don't know what they're doing or they're trying to distort the truth," said Robinson (McQuaid 2000). The glaring defect of the LTR studies is that they dilute clusters of cancers in vast pools of populations and include non-industrialized areas and vast tracts of uninhabited swamp in statistical analyses (Koeppel 1999, p. 18).

The studies would be more epidemiologically sound if they focused on the swath of the Industrial Corridor rather than entire parishes as LTR studies do (McQuaid 2000). For example, in 1995, 3 boys from Ascension Parish were diagnosed with rhabdomyosarcoma, a very rare and extremely malignant tumor of soft tissue (Ferstel 1998). Sheila Moore, a physician from Baton Rouge, felt that further study of this cancer cluster was warranted, but the state Office of Public Health decided that 3 cases were too few to justify the effort (ibid.).

This is scientifically myopic, since clusters of cancer is exactly where the focus should be, according to Patricia Williams, a physician and director of the Occupational Toxicology Outreach Program at LSU Medical Center (Koeppel 1999, pp. 17-18). In 1993, responding to an alleged cluster of cancers around the Denham Springs/Walker dumpsite, a facility used by

numerous companies to dispose of noxious waste, the state identified only a few cases of cancer and concluded that exposure was too minimal to cause harmful health effects by using numbers from the LTR. Williams, however, studied the same case for plaintiffs suing the companies that used the dump, instead used numbers gleaned from fieldwork. Contrary to the state's finding, she found many more cases than the state acknowledged, and observed a striking connection between exposure to toxins and contraction of cancer. The companies settled for \$131 million in 1997 (ibid., p. 19).

Public health officials admit they have been reluctant to study small clusters of cancer which they say points to limitations of the structure of epidemiology itself, not their studies. Epidemiologists typically work on large scales, trying to discern patterns within groups of tens of thousands to millions. If the sample size is a community neighborhood next to a hazardous waste facility, small numbers can have large statistical impacts. For example, one more case of cancer could double a rate, said Vivien Chen, director of the LTR (McQuaid 2000). The large sample sizes needed for epidemiological research makes it an imprecise science.

Environmental justice activists complain that epidemiology, at least as practiced in Louisiana, is contaminated by the corrupting power of money, making it more political than scientific. A report by Environmental Health

Network and the National Toxics Campaign Fund, two nonprofit environmental organizations, argued that federally-funded studies are designed a priori to be inconclusive in order to reassure the public of safety and not cause alarm (Russell et al. 1992). Federally-funded studies use statistical methods ill-equipped to deal with small and mobile populations living around hazardous waste sites. The report also makes the claim that researchers known to hold a bias against correlating public health and industrial waste are chosen to run the studies (ibid.). For this reason, Tulane University law professor Oliver Houck is dubious about any research paid for by government or industry. Of epidemiological studies, he says, "You have to ask the primary question, 'Who paid for the research[?]' (Verstel 1998).

In Louisiana, industries give enormous gifts to medical schools and universities, which run the cancer studies together with the State Health Department. Freeport McMoRan, one of the world's largest manufacturers of fertilizers and historically one of the biggest polluters of Louisiana waterways, donated \$1 million to the LSU cancer center and \$1.6 million to the University of New Orleans Center for Environmental Modeling. Oil tycoon C. B. Pennington gave LSU \$125 million to build a Bio-Medical Research Center, and Lod Cook, chairman of Arco, paid for most of LSU's alumni center. Texaco leased Tulane a building at no cost for its Public Health School, and Tidewater Industries, a company that services oil rigs, gave the

university a 24-story building for its medical programs (Koeppel 1999, pp. 19-20). Finding large petrochemical corporations who have not donated generously to public health programs is a greater challenge than finding those that have not.

Allegations of reprisals have been made by researchers who claim not play the industry-government political game. Paul Templet, a professor at LSU and former head of the state's Department of Environmental Quality (DEQ), claimed that his salary at LSU was cut by \$10,000 after he questioned industry practices while serving at the DEQ (Koeppel 1999, p. 22). After Marise Gottlieb, a physician and former medical researcher at Tulane, published research finding links between ill-health and pollution, she lost her funding at the university (ibid.). "We were making progress," Gottlieb said. "You have to ask why it stopped. My surmise is that I was doing the 'wrong' kind of work. Had I said there was no relation, everybody would have been happy" (Ferstel 1998). And Williams, whose conclusions have differed pointedly from those of state health officials, was allotted \$1.1 million by the legislature to open a clinic to treat patients exposed to toxic chemicals. However the funds were blocked by Governor Mike Foster and Mervin Trail, the chancellor of LSU's medical center, and the clinic never opened (Koeppel 1999, p. 22).

The dynamics of money and politics influence environmental regulation. At a 2001 town hall meeting in New Orleans, attorneys, environmentalists, scientists, and citizens testified that state officials are lax in environmental law enforcement (Swerczek 2001). According to Templet, the close alliance between the chemical industry and political establishment automatically disinclines enforcement of environmental regulations (ibid.). Former governor and millionaire businessman Mike Foster, for example, has earned up to \$200,000 a year in royalties from Exxon (Koeppel 1999, p. 20), and Jim Porter, who was director of the state's Department of Natural Resources from 1984 to 1988, took a top job at the Mid-Continent Oil and Gas Association after employment with the state (ibid.). Some Louisiana officials are even employed simultaneously by government and industry (ibid.).

The Shintech-Convent plant controversy is a case in point. The Houston-based company is the wholly owned U.S. subsidiary of Tokyo-based Shin-Etsu Chemical Company, the world's largest manufacturer of polyvinyl chloride (PVC), a common plastic pipe material. In 1996, Shintech investigated the possibility of building a chemical plant on a former sugarcane plantation near the town of Convent in St. James Parish, which has been consistently ranked as one of the most polluted counties in the nation. The parish is also home to the IMC-Agrico fertilizer plant which discharged 174 million pounds of toxic chemicals into the Mississippi River every year,

earning it the distinction of being the most toxic plant in the U.S. until it was shut down in 1994 (Cockburn 1997).

At that time, Governor Foster approached Shintech with inducements of \$120 million in property tax reductions and tax credits in return for the prospect of creating 165 permanent new jobs (ibid.). Local community activists expressed perplexity at the rationale of creating new jobs, since the parish was already home to 11 chemical plants. "If these industrial plants are so great," one activist asked, "why does our community still have 62% unemployment? It's about profit and greed, not jobs and justice" (ibid.).

Given the area's poverty, high cancer rates, and largely minority population, the Tulane University Environmental Law Clinic sued to have the plans stopped in behalf of local opposition led by the St. James Citizens for Jobs and the Environment under the auspices of President Bill Clinton's 1994 Executive Order (ibid.).

Tulane's legal action provoked outrage from Governor Foster. At a May 1997 meeting of the New Orleans Business Council, Foster assailed the those affiliated with the clinic as "a bunch of modern day vigilantes who are just making up reasons to run businesses out of the state" (ibid.). Foster

threatened to revoke the tax exempt status of Tulane, which at 7000 employees has the largest workforce in the state (ibid.).

Therefore the issue of environmental injustice along the Mississippi River Industrial Corridor involves money and politics as much as epidemiology. Templet has likened Louisiana to a developing country where a few industries and their political allies profit handsomely while the masses languish (Koeppel 1999, p. 24). In 1998, for example, the petrochemical industry accounted for nearly a quarter of the State of Louisiana's total gross state revenue (Koeppel 1999, p. 19). At the same time, some of the state's worst polluters donated generously to potential candidates—and even environmental groups. Freeport donated \$5 million to the Audubon Institute, \$350,000 to the Nature Conservancy, and Shell gave \$5 million to the National Fish and Wildlife Foundation (ibid., pp. 19-20).

While some see free-markets as the root of environmental injustice, others see free-markets as the remedy. Even if industries have unfairly targeted certain communities for untoward environmental practices, forcing industry out will only worsen socioeconomic inequities and erode quality of life rather than improve it. As LSU economist Loren Scott has put it: "Poverty kills a lot more people than environment does" (McConnaughey 1999). In the Shintech case, for example, the corporation was charged by the Tulane law clinic with

environmental racism under the EJA of 1994, which makes illegal any “disproportionate distribution of environmental hazards” in low-income communities. Shintech was open to such charges insofar as about 40% of Convent residents had incomes at or below the federal poverty line. Rather than fight the charges in court, Shintech canceled plans to build the plant and eventually decided instead to build a \$1 billion plant in Plaquemine, Louisiana, which has markedly less poverty than the Convent area and thus makes it less susceptible to the legal ramifications of the EJA. Thus, Scott argued, it will be even harder to find jobs in St. James Parish, where they are desperately needed (McConnaughey 1999). Economists and politicians argue that meddling with market forces hurts, rather than helps the poor people who need economic development the most (Payne 1998).

Research suggests that the two types of communities with the lowest levels of pollution are poor communities with little economic activity and affluent communities that derive income from non-industrial sources (Daniels and Friedman 1999). If this is true, cynics of environmental justice legislation argue that blocking new industry through claims of environmental injustice may be exactly the wrong tact to take in improving the lives of poor minorities: “The final determination of the best public policy depends on how much weight is given to the benefits of jobs as against the cost of pollution to the area” (Couch et al. 2003, p. 244).

Proponents of the EJA rejoin that the old argument that environmental regulation is going to damage the economy and drive away jobs is just plain false. "The economy has probably quadrupled since the National Environmental Policy Act was passed in 1970," claimed Ken Cook of the Clearinghouse on Environmental Advocacy and Research, a nonprofit organization. "I don't think anybody...is going to object to a factory that's going to produce clean products in a clean way. But if you don't set that bar up, any old factory can produce any old way" (McConnaughey 1999).

Templet thinks that Louisiana will remain enticing to big petrochemical corporations even with tightened regulations: "They have everything they need here—the gas and oil, water transport and pipelines. And chemical firms spend just 1 percent or less of their total revenues on pollution controls" (Koeppel 1999, p. 24).

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