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Ol' Man River or Cancer Alley?

While labor unions and consumer advocates were battling the chemical industry in the 1970s, communities around the country began protesting against the industries whose pollution of their air and water was endangering their health. Many of these struggles took place in the South, where a large portion of the chemical industry had found the political and economic environment more friendly to their interests than in the industrialized corridors of the Northeast and Midwest. Also in the 1970s Louisiana emerged as one of the nation's leading centers of vinyl chloride and polyvinyl chloride production. Louisiana was rich in natural resources and offered a low-cost labor force and a state government eager to provide lower taxes and lax environmental regulations.

What industry did not anticipate was the powerful resistance of residents who organized their communities; demonstrated against plants; allied themselves with union activists, who provided support and inside information about company malfeasance; joined with national environmental groups with access to national media; and linked up with public interest lawyers, who challenged the alliance between the industry and the state.

The Power of the Money of This Corporation

Even in the early twentieth century, Louisiana had an intertwined relationship with the petroleum industry, which had been drawn to Louisiana by its abundant natural resources. The state's first oil wells were drilled in 1901 on the west side of the Mississippi River near White Castle, a town just south of the capital, Baton Rouge.[1] By 1920, large-scale drilling had begun in most of the state's sixty-four parishes, which are similar to

counties. By the end of the decade, following the election of Huey Long as governor (1928), the oil and gas industry had become a mainstay of the state's economy. Standard Oil constructed its first refinery in Baton Rouge in 1909, and the extraction of oil in the state skyrocketed from 548,000 barrels in 1902 to 92,000,000 barrels in 1939 to 214,000,000 barrels in 1952.[2]

In the years around World War I, the Standard Oil Company revolutionized the production of organic compounds by isolating hydrocarbon chains (the basis for many synthetic fibers) from petroleum refinery production rather than coal tar. This has been considered the "petrochemical industry's starting point,"[3] enabling the industry to move beyond the production of fuel alone and establishing a vast synthetics industry that later included vinyl chloride and polyvinyl chloride. In a half century, petrochemicals became a staple of the new American economy, finding their way into virtually every type of consumer and industrial product: plastic bags, automobiles, water pipes, computer chips, paints, medicines, carpets, clothes, shoes, luggage, furniture, heat shields for rockets, and diapers.[4]

An epic battle between the petroleum industry and the people of Louisiana can be traced back to the populist crusade of Governor Huey Long to rein in Standard Oil. (Long was governor from 1928 through 1931, and though he was elected to the U.S. Senate that year he continued to run the state until his assassination in 1935.) In 1928 Long, recognizing that Standard Oil and other major oil producers needed Louisiana's oil and natural gas to expand their industry, proposed an increase in the tax on natural resources (called the severance tax) and a change in the way the tax was applied. He recommended that the tax be based upon the quantity of oil and gas removed from the ground rather than on the market value of the resource when it was extracted. This effectively placed "a heavier burden on the oil and gas industries," which set the stage for a conflict that would burst into the open the following year.[5]

In 1929 Long sought to further increase the tax revenues from industry through an "occupational license tax"—specifically, a tax on the refining of oil—to provide more funds for education. Standard Oil responded by funding an intensive lobbying campaign (some would say the company paid off legislators) and defeated the bill in the state legislature. T. Harry Williams, Long's biographer, relates the sordid and heavy-handed politics that went into the defeat of the tax bill. The president of Standard Oil's Louisiana division, Daniel R. Weller, recruited a well-known political figure whom Williams refers to as "Jim." The company reserved an entire floor of Baton Rouge's chief hotel, the Heidelberg, near the Statehouse.

> To his floor of the hotel [Jim's] associate brought legislators and people from all over the state who could exert pressure on the legislators. Jim used whatever methods of persuasion he had to: they were usually blunt. The associate summarized them: "By the time Jim got through paying 'em off things were pretty hot." Surviving members of the legislature remember Jim's activities. "The money he spent was terrific," said one. "You could pick up $15,000 or $20,000 any evening then." [6]

Yet the extraordinarily popular Huey Long had resources of his own and in the end exerted enough pressure to force the bill through. Seeking revenge, Standard Oil organized a campaign to impeach Long. In what historian Alan Brinkley describes as "a tumultuous meeting of the House" involving "a jammed voting machine, hysterical shouting and swearing, flying fists, thrown inkwells, and the bloodying of a Long opponent by a Long ally,"[7] Long was accused of attempting to bribe members of the legislature, misappropriating government funds and state property, carrying concealed weapons, and even disposing of and destroying furniture and fixtures from the Governor's Mansion. Ultimately, he was impeached but not convicted. Long counterattacked, distributing circulars statewide announcing that the real issue was his populist opposition to greedy Standard Oil: "I had rather go down to a thousand impeachments than to admit that I am governor of the state that does not dare to call the Standard Oil Company to account so that we can educate our children and care for the destitute, sick, and afflicted. If this State is still to be ruled by the power of the money of this corporation, I am too weak for its governor."[8]

Nevertheless, despite almost revolutionary rhetoric, it was a fact that Long's state was extremely dependent on taxes from the oil and gas companies. And with these tax revenues, Louisiana was able to build an infrastructure of roads and bridges that rivaled the more industrial states of the northeast. At the beginning of Long's administration, the "state highway system comprised fewer than 300 miles of paved roads and only three bridges; by 1935, there were 3,754 miles of paved highway, forty bridges, and almost 4,000 miles of new gravel farm road."[9] The state also established one of the most extensive free public hospital systems in the nation, largely based on the taxes provided by the oil and natural gas industries.[10] Louisiana began programs aimed at increasing adult literacy; increasing elementary and high school attendance rates; providing night-school classes and free textbooks for public, private and parochial schools.[11] As Brinkley points out, Long's reforms put into place an infrastructure that was essential for the future industrial development of the state.[12]

In the 1940s petroleum reserves were discovered off the Gulf of Mexico coast, and by 1947 offshore drilling began in earnest. By 1955 there were more than 700 proven oil and gas fields throughout the state with more than 21,000 wells, making Louisiana one of the leading oil-producing states in the nation. From the 1930s through the 1950s, the oil and gas boom provided Louisiana with its richest source of revenue. By 1954–55, 23 percent of the state's income came from mineral leases and royalties, and another 12 percent came from taxes on other natural resources.

Even though by 1949 Louisiana ranked first in per capita aggregate state taxes, meaning that the state received huge revenues, the real burden on the state's citizenry was actually quite low. The state was still largely poor and rural, ranking thirty-ninth in the nation in per capita average income, yet it ranked third in terms of money spent per citizen for government operations. In 1957–58 Louisiana's per capita expenditure for education was $64.68, compared with a national average of just over $39. Louisiana provided an average of $46.50 per citizen in welfare expenditures, while the national average was $16.64. Similarly, the state provided its health and hospital system with an average of $14.19 per citizen while the national average was $11.46. (Neighboring Texas, which also had tremendous oil and gas reserves, spent $41.61 on education, $16.83 on welfare, and $6.02 on health and hospitals.) Such broad social spending led conservative critics, by 1960, to charge that "Louisiana has become a 'welfare state' and that it performs too many services for the individual members of its citizenry." One critic suggested that "responsible individualism, and the dignity of man may again become the militant faith of our people so that they will successfully challenge the advocates of collectivism and the irresponsibility of the 'welfare state.'"[13]

The petrochemical and refining industries seemed to be the one area of manufacturing to thrive in Louisiana, which eventually became one of the nation's leading chemical and refining centers. The Mississippi River corridor between the ports of Baton Rouge and New Orleans was extremely rich in natural resources: oil, gas, brine, sulfur, fresh water drawn from aquifers, and huge salt domes that could store vast oil surpluses.[14] More than 600 salt domes lay beneath the surface along the Gulf Coast, some "as large as a mile wide and six miles deep," providing extraordinarily cheap storage for hundreds of millions of barrels of oil and other materials essential for the petrochemical and chemical industries.[15]

Between 1937 and 1959 the number of sugarcane farms in Louisiana decreased from 10,260 to 2,686, and the average acreage of the remaining—and largely consolidated—plantations increased from 28 to 101 acres.[16]

Over the course of the twentieth century, the large plantations that had dominated the antebellum and postbellum eras gave way to ever larger corporate farms, turning sugarcane production into a big business. Mechanization fundamentally altered the work process, forcing thousands of former field hands into increasing poverty and dependence.

Although the plantation system dissolved, most of the state's poor remained rooted in the land and the social relationships that had dominated the plantation communities.[17] Many still remember the near-slavery conditions under which they grew up. Amos Favorite, who later became involved in a major environmental rebellion in the Mississippi River corridor, recalls his youth on the Waterloo sugarcane plantation in Geismar during the 1930s: "It was educated slavery. Us colored children were only allowed to go to school three months a year until seventh grade. It cost too much to go see the doctor in Gonzalez [Louisiana]. The plantation vet would look at us when he came to check the animals." Favorite abandoned his schooling completely at the age of nine when his mother died and he was forced to cut cane for twenty cents a ton.[18]

One account of this system written in the 1950s captured the nature of the exploitation. The plantation master was still the "rock" upon which the whole society rested. He fought to preserve the "paternalism, racial advantage, family prestige and cultural rank" that had characterized the sugar regime. At the same time he adopted "machines, science, financial finesse and administrative competence" to bring rationality and modernity to the plantation system. The new boss played a dominant role in the community—often controlling the movie theaters, drugstores, and even the banks. The plantation workers remained as dependent as ever, subject to dismissal and blacklisting if they objected in any way to the place given them in the unspoken social contract of rural sugar society. "A hired man is always in danger of becoming a fired man, dismissed not only from his plantation but from the entire cane belt, where the blackball rolls with the speed of a telephone call."[19]

Between 1940 and 1955 most sugarcane fields were mechanized, as fifty or more men could be replaced by a single harvester "requiring the services of an operator and two helpers."[20] But the workers who remained on the larger, mechanized sugar farms did not benefit from the wealth produced by mechanization. Little or nothing was done to fix their dilapidated houses. It was not unusual for African American families to live in a one-room house constructed of boards between which daylight could be seen. Located on narrow dirt roads that marked the borders between the old plantations, many of these structures lacked indoor plumbing and electricity. In 1950, the average annual income in St. James Parish, home of the town of Convent, where environmental justice struggles would later occur, was $713 per year, one-fifth of the amount that government identified as the poverty level in the New Orleans area. And this was not even the poorest county in the sugar region; neighboring St. John's Parish recorded an average income of $663. These communities were often run like company towns. The local stores, owned by the plantation, forced workers into perpetual debt by selling to them on credit with high interest rates, thereby tying them to the low-paying jobs that predominated in the area.[21]

Despite the fact that Louisiana was still responsible for three-quarters of the nation's domestic sugar production, the state's identity had changed from one dotted with sugar plantations to one dotted with the factories, oil derricks, and cracking towers of a growing petrochemical industry. A 1958 article in *National Geographic* remarked that "an astonishing complex [of large industrial plants] has sprung up, involving some two billion dollars in new or expanded operations. Chemicals, manufacturing, and processing establishments occupy mile after mile of Mississippi frontage. Steel towers rise and derricks dot the levy edge, until the region from New Orleans to Baton Rouge seems one great chemical-industrial plant."[22] By the mid-1950s, chemicals and chemical products ranked first in the value of manufactured products in Louisiana.[23] In 1956 the Ethyl Corporation began construction of a vinyl chloride monomer plant and W. R. Grace Company built a polyethylene plant in Baton Rouge.[24]

The industry's movement into this area was not driven by merely economic considerations. Industry counted on the political powerlessness of the mostly poor, African American population, virtually all of whom were deprived of the right to vote. By concentrating their refineries and other factories in these communities, industry gained access to cheap land without worrying about political opposition. This would change as the Civil Rights movement of the 1960s set the stage for a long process of political empowerment that would eventually disrupt the South's age-old arrangements between industry and the state.

DOW IS THE PLANTATION NOW

Part of industry's decision to move to Louisiana's Mississippi River corridor had to do with the fate that had befallen the plants it established along the Gulf Coast, particularly in Texas, during the 1940s and 1950s. When Dow initiated a program of expansion in Texas, planning to make it the center of the company's growing empire, it had not expected to be faced by

one of the strongest labor-organizing drives in the south. From Beaumont to Freeport to Corpus Christi, twenty-three unions, including the Oil, Chemical and Atomic Workers Union (OCAW), the Longshoremen, and the Oilfield, Gas Well and Refinery Workers, set about organizing the thousands of black and white chemical workers hired to run the plants.[25] According to Dow's official historian, "at any given moment at least one of the locals and more often several were threatening a strike."[26] In 1955 and 1956, strikes largely closed down Dow's operations in Freeport.

Frustrated by this labor unrest, Dow decided to extend its southern operations to Louisiana's Mississippi River industrial corridor. In 1956, Dow purchased the old Union Plantation, which was located in Plaquemine, ten miles south of Baton Rouge. This 1,700-acre sugar plantation, owned by the descendants of Andrew H. Gay, who had purchased the site at a tax sale during the Civil War, employed more than six hundred men and women in the early twentieth century.[27] The plans for the plant in the community of eight thousand people quickly grew from an initial investment of $20 million to $75 million, "the biggest single expansion the company had attempted since 1940." The plant, comprising seven major projects and thirty-five minor ones, became the largest petrochemical complex in Louisiana (and one of the largest in the world), quickly gobbling up land from several other plantations, including Reliance, New Hope, Mayflower, and Homestead.[28] The site, extending westward inland from the Mississippi River, was twenty-three miles north of a Dow property that contained the Napoleonville salt dome, a source of brine necessary for the production of chlorine. Chlorine, in turn, was used in the production of ethylene dichloride, a feedstock for vinyl chloride monomer and other plastics.[29]

Dow was counting on the fact that Louisiana remained a segregated state, populated in part by poor blacks so desperate for work and feeling so powerless that they could be counted on not to cause the kind of labor unrest Dow had experienced in Texas. But just as the new Dow plant opened, the Civil Rights struggle intensified in Louisiana and changed a situation that had seemed so propitious for Dow.

The Congress of Racial Equality (CORE) began major organizing drives to register voters and to desegregate stores, public buildings, and the workforce. In May 1958, New Orleans, one hundred miles downriver from Baton Rouge, had desegregated its bus and trolley lines after several years of demonstrations and court cases. But change was not going to come easily in Louisiana. Outside of New Orleans, the Ku Klux Klan and other white supremacist groups continued to instill terror in rural African

American communities. "Between 1957 and 1960 the NAACP struggled to stay alive outside of New Orleans," observes Adam Fairclough in *Race and Democracy.* Presidents of local branches of the National Association for the Advancement of Colored People [NAACP] refused to hold meetings for fear of retribution. In fact, "the NAACP had no functioning branch in Louisiana's capital city between 1956 and 1962."[30] As a result, CORE brought in a group of "young volunteers who assembled in Plaquemine in July 1963 [and] inaugurated a new phase of the civil rights struggle in Louisiana."[31]

Much as the Student Nonviolent Coordinating Committee [SNCC] had done in Mississippi, CORE flooded the state with volunteers who challenged segregation and thereby threatened the power of planters, industrial leaders, and state and local officials whose rigid discriminatory practices were at the heart of segregationist policies. In Iberville Parish, in which Plaquemine and the new Dow plant were located, no African Americans had been allowed to register to vote since 1960. In Plaquemine itself, northern volunteers were "appalled by the poverty and squalid housing conditions" in the black communities. "In an unincorporated area of Plaquemine—one of two black neighborhoods deliberately gerrymandered out of the town's boundaries—people had to draw their water from pumps and relieve themselves in outhouses or in the woods."[32] Although the number of African American registered voters rose 800 percent during World War II to 7,561 people in 1946, blacks still accounted for only 1 percent of Louisiana's registered voters at a time when they constituted about a third of the state's total population. Not until the massive voter registration drives and passage of the federal Voting Rights Act of 1965 would there be at least one black registrant in every parish of the state.[33]

In June 1963 the civil rights activists in Plaquemine demanded a wide range of reforms, including an end to segregation of public facilities and employment discrimination and "the annexation of two black neighborhoods that currently received no municipal services." Although demonstrations continued until mid-August, the mayor, Charles Schnebelen, refused to negotiate and insisted that the protesters "submit their demands to the City council in the usual manner." The local black leadership recruited James Farmer, CORE's national director, to come to Plaquemine to lead what would become the city's largest civil rights demonstration to date. On August 19 one thousand people marched on City Hall. More than two hundred people were arrested, including Farmer, who was jailed and as a consequence was unable to deliver his scheduled speech at the famous March on Washington. After Farmer was released, however, he was still in

jeopardy, for the police had deputized white citizens and vigilantes who undertook a violent repression of the demonstrations. Farmer got out of town by hiding in a casket that was carried by hearse to New Orleans.[34] He later claimed that he had "never seen such police treatment in Mississippi or Alabama. . . . Police did not just break up the demonstrators, but pursued them into churches, homes, and any other shelter they sought."[35]

Imagine the situation in Louisiana. The chemical industry had built massive chemical plants across the state and was planning for the development of more plants. A huge civil rights struggle was playing itself out, and the consciousness of local citizens was being raised. Citizens were becoming more attuned to the environmental impact of the petrochemical industry and more vigilant about the damage it was doing. Then in the 1980s and 1990s, two communities in the Plaquemine area discovered that a growing number of their water wells were polluted with chemicals used in the production of vinyl chloride. Morrisonville, a largely black community situated on the river bordering a Dow plant, had been founded in the 1870s by slaves freed from the Australia Plantation, just north of Plaquemine.[36]

Fearing potential lawsuits for damages resulting from explosions, pollution of water tables, or diseases resulting from air pollution, Dow tested a new strategy to deal with the local consequences of environmental pollution; the company would simply buy the town and all the homes in it.[37] Just as damaging federal data were about to be released in 1989, Dow let it be known to the residents of Morrisonville that it was the only buyer in town, and if they didn't sell to Dow, their property would later be worthless.[38] One of the last to leave, G. Jack Martin, a deacon at the Nazarene Baptist Church, the historic heart of Morrisonville, summarized his experience: "Dow didn't exactly ask for our input. They just came in and told us what they were going to do. I guess Dow is the plantation now."[39] The town's "big mistake," according to Martin, was that it "sold Dow some land in 1959." Before that, there had been a greenbelt between the town and the plant, but the company "built on it right out to the fence until they were on top of us."[40]

While most of the residents accepted Dow's offer to buy out their home and land, about twenty Morrisonville families refused. "Dow doesn't pay for attachment to land, for the inheritance that is in this community," said Rosa Martin, Jack's wife and the town's informal historian, who owned a house so close to the plant's property that the plant's loudspeakers could be heard inside her brick home.[41] In the end Morrisonville was abandoned. (In 2001 the Louisiana Department of Health and Hospitals "discovered high levels of vinyl chloride" in the drinking water of a community in Plaquemine, leading to lawsuits and continuing controversies over chemical plants in the area.)[42]

A similar drama played out in the town of Reveilletown, just south of Plaquemine. Residents of this primarily African American community had complained about the fumes and emissions from the plant and argued that "the entire community was poisoned by vinyl chloride emissions loosed from Georgia Gulf's manufacture of plastics." One of the residents of Reveilletown, Janice Dickerson, became active in the environmental justice movement and helped organize a candlelight vigil in 1989 "in which black and white environmentalists mourned the death" of the community.[43] The Georgia Gulf Corporation, realizing that the protest might result in lawsuits brought by the residents, razed the town and constructed homes for residents elsewhere.[44]

The companies considered the buyout an effective way to protect residents from possible harm from dangerous explosions and toxins released into the air. "It makes sense in putting a [buyout] program together instead of waiting for an accident," remarked Michael Lythcott, a consultant who helped design similar efforts for other companies.[45] Environmental activists saw the issue differently. Mary Lee Orr, the executive director of the Louisiana Environmental Action Network (LEAN), stated that "companies are reducing their problems by moving people instead of reducing accidents and pollution."[46] Nor was this approach specific to Dow or Louisiana. As the *New York Times* noted, "Prodded by lawsuits over pollution and damage claims from a number of explosions, several of the nation's largest oil and chemical companies are spending millions of dollars to create safety zones by buying up the homes around their plants."[47] All that is left to mark the sites of Morrisonville and Reveilletown today are a signpost and a fence in the shadow of giant chemical plants, the graveyard of Morrisonville's Nazarene Baptist Church, and an open-sided wooden prayer site, built by Dow, for family members visiting the graves.

WELCOME TO CANCER ALLEY

Before the buyouts of the 1980s, older communities found their environments threatened by effluents belching from cracking towers and smokestacks, leaking from pipelines, and streaming from salt domes used for oil storage. In Texas and Louisiana, leaks from these salt domes were a major problem for communities.[48] The Mississippi River itself was used by chemical manufacturers as an open sewer for industrial wastes and by-products. By the early 1970s, the Mississippi River had become a threat to

the population living along its shores. One longtime resident remembers that in the 1950s and early 1960s, she would go to the top of the flood levees that kept the river from destroying the surrounding sugar country to swim, draw water, and wash clothes. She remembers being baptized in the river and recalled community and church events along its shores.[49]

By the early 1970s, these activities were nearly impossible. Oil and chemical companies virtually shut off access to the river for much of the area's population by building docks and storage areas for the huge barges that took refined products to New Orleans or up the Mississippi to Baton Rouge, Memphis, St. Louis, and other cities.

By the late 1970s, chemical pollution was becoming the focus of concern not only for workers in the vinyl plants but for the general population as well. In 1978, as New York's Love Canal dominated headlines across the nation, researchers at the National Cancer Institute began mapping cancer hotspots, where cancer incidence rates were growing most rapidly. "Cancers that in the past have been related to industrial exposure [in the plant] have continued to increase even after the effects of... cigarette smoking have been removed," Marvin Schneiderman of the National Cancer Institute told the National Conference on the Environment and Health Care Costs in 1978. Showing a map of the United States with high incidence areas darkened, he illustrated that Louisiana was virtually blotted out. "It would be nonsense for me to assert that all this increase was due to industrial [pollution] exposure," he noted. But, "It would be equivalent nonsense and possibly criminal to assert that none of it was."[50] The beautiful state of Louisiana, once widely known for its pelicans and bayous, had become "a blotted out" area on a map showing areas of industrial pollution.

But the severity of the pollution did not keep industry from seeking to expand; nor did it keep the state from encouraging that expansion. During the 1970s, the Mississippi River corridor was viewed as ripe for investment by foreign companies. German and Japanese corporations, looking for new outlets for their capital, turned to the American South as an appropriate place for many of their most polluting industries. As historian David R. Goldfield explains in his survey of the South in the post–World War II era, "much of this influx [of capital] resulted from the export of polluting firms from Germany and Japan." He quotes the Japanese consul general in Atlanta, who explained that "older industries... are being phased out in Japan and exported to other countries.... We will put these high pollution industries where there is space and water enough to handle them... like here in the South."[51] (One local newspaper recalls that by the 1960s and 1970s, industrial plants were so dense along the river that "some began calling the region 'America's Ruhr Valley.'"[52]) Japan's reputation in vinyl chloride production had been sullied because of a tragedy that occurred in Minamata Bay, Japan, in the early 1960s. Forty-three people died and an unknown number of others were blinded and brain damaged after a vinyl chloride factory dumped into the bay huge quantities of mercury salts, which are used in the vinyl chloride production process. Between 1953 and 1960, 111 people were poisoned by eating contaminated fish and 19 "congenitally brain-damaged children were born."[53] Since that time, many others have died or been damaged by the long-term effects of the poisons.[54] Since at least the 1960s Japan has tended to export its environmentally destructive industries while maintaining a relatively strong environmental record at home.[55]

The conflict between industry and the environment escalated. Industry grew tremendously, and so environmental pollution became worse and worse. In the early 1970s, the Environmental Defense Fund issued what it called "the first evidence in this country... that carcinogens in drinking water are in sufficiently high concentrations to endanger human health." The study focused on the Mississippi River in Louisiana because some communities used only river water and others used only groundwater for drinking and household uses. Although the evidence was "fragmentary," the findings suggested a link between pollutants and cancer. The study found that "nine parishes in [Louisiana] are among the forty-five cities and counties in the United States that have the highest reported cancer death rates for white males."[56] By the early 1980s, Louisiana displaced New Jersey and its chemical industry along the turnpike as the nation's most polluted state.[57]

In 1982, Louisiana faced an industrial disaster that demonstrated that the toxins inside the factory endangered not only workers but also people at large. A train that included numerous chemical tanker cars derailed in Livingston, a town between the chemical centers of Geismar and Baton Rouge. Forty-three cars filled with petroleum, vinyl chloride, tetraethyl lead, phosphoric acid, methyl chloride, styrene, toluene diisocynate, or ethylene glycol derailed, shattering windows and setting off "a series of explosions... at the derailment site in the middle of town."[58] Fumes, fires, and spills over several days led to the evacuation of 2,700 people who were "kept from their homes for two weeks."[59] Clean-up workers "built a network of earthen ditches and pools to collect vinyl chloride as it seeped from the cars" in order to "quicken the burnoff of the vinyl chloride, allowing the clean-up to continue." Although no one could predict exactly how the fumes would affect people in the surrounding area,[60] Livingston became a

metaphor for the acute danger that the chemical industry posed as it expanded through the 1980s. When Formosa Plastics announced plans to build a polyvinyl chloride plant in north Baton Rouge close to its source of vinyl chloride monomer and other plastic feedstocks, it did so in part "to insure that it never has another Livingston."[61]

Between 1984 and 1989, one of the nation's longest management lockouts took place at the BASF chemical plant in Geismar. Geismar, the site of large chemical plants owned by BASF, Shell, and other manufacturers, was long known for its filthy plants and lax environmental controls. BASF, the world's second largest chemical company, had built the largest of its more than eighty U.S. chemical facilities in Geismar in the late 1950s. In February 1970, the president of the OCAW local gave a vivid account of the dumping of chemical waste in Geismar: "We have three chlorine units. The company used to put the tail ends off in a sump and pump it into the Mississippi River, but they've come up with a cheaper idea where they dump it right into the plant ditches and chlorine disposal towers. . . . We are constantly smelling this chlorine, according to which way the wind blows, and one of the plants has a ditch around it on three sides, so we constantly smell this chlorine all day, twenty-four hours a day, depending on what job you're working at."[62]

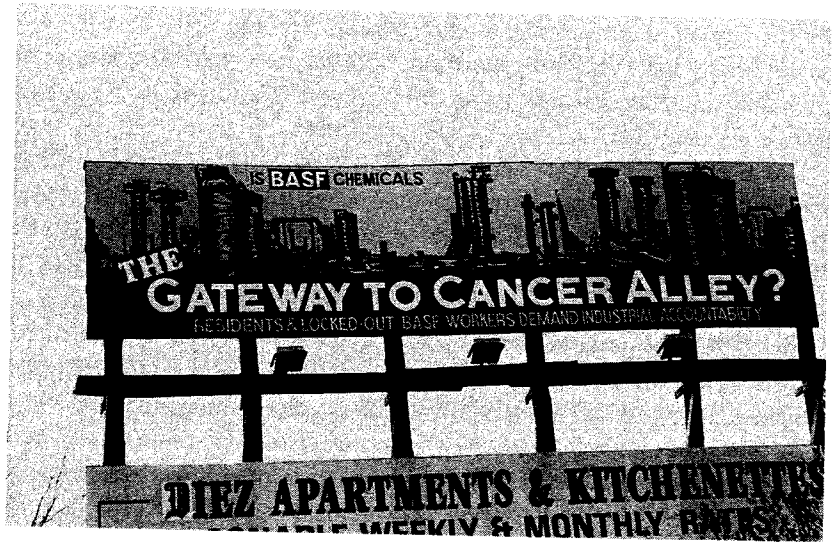
The lockout at Geismar was part of a broader attempt to undercut the union movement in BASF's American plants. It took place during the heyday of President Reagan's anti-union activities. The company had proposed a contract that included a wage freeze for a year, cuts in health care provisions, and the right of the company to contract out certain jobs to nonunion companies.[63] When the union rejected these provisions, the company "escorted 370 of the workers outside the plant, locked the gates, and vowed not to let the workers—or the union—return."[64]

Not only was the lockout a sign of BASF's disdain for workers, but it was also the occasion of a new alliance between the labor movement and the residents of the region, who were becoming attuned to pollution. Richard Miller, a New Yorker who had worked with Tony Mazzocchi, legislative director at the OCAW, traveled down to rural Geismar, planning to stay a short time. According to Mazzocchi, Miller became deeply involved with the BASF workers and eventually became a chief organizer for the union. Looking around for allies in the fight against BASF, he found many workers and their families and neighbors who were deeply preoccupied by the issues of health and safety. Workers told stories about the irresponsible ways of BASF. People pointed to the dramatic impact of the chemical plant

on the environment: pecan and other trees died or no longer bore nuts or fruit; cars were covered with a white powder that corroded their finish. By focusing on environmental issues, the union was able to forge strong ties with workers and other local people.[65]

With its long history of attention to occupational and environmental health, the OCAW was the perfect union to begin a campaign against BASF for polluting the region's air, ground, and water. Using billboards, print advertisements, radio broadcasts, and demonstrations, the OCAW sought simultaneously to build support for the locked-out workers and to indict BASF for its unsafe and environmentally dangerous practices. By providing information to local environmental organizations, the OCAW helped challenge BASF's toxic dumping practices, claiming credit for stopping the construction of a $50 million petrochemical plant. The union also helped establish environmental groups, including the predominantly African American Ascension Parish Residents Against Toxic Pollution, Louisiana Workers Against Toxic Chemical Hazards (LA Watch), the Geismar-based Clean Air and Water Group, and the Louisiana Coalition for Tax Justice.[66] In return, the local people provided the OCAW with information and showed a willingness to join the campaign against BASF.

The union was relentless in its attempt to reveal BASF as the despoiler of the Mississippi River, even establishing contact with the Green Party in Germany and pointing out BASF's history as a company that prospered during the Nazi era. By demonstrating BASF's role in the environmental destruction of the Rhine River in Germany, the union began to forge a public consciousness about BASF's role in the despoiling of the Mississippi River as well. *Chemical Week* credited locked-out BASF workers with creating the term "Cancer Alley" to identify the lower Mississippi River in the mid-1980s: "It was BASF workers whose 'Welcome to Cancer Alley' billboards publicized the moniker that still stigmatizes the area."[67] Other banners and billboards dubbed the area "Bhopal on the Bayou."[68] Although the workers finally ratified an unsatisfactory contract in December 1989, after a sixty-six-month lockout, the union had survived and the workers had profoundly influenced the community by raising consciousness about environmental toxins. According to the Louisiana Environmental Action Network, "many workers and citizens in Louisiana will never again look at the state's huge petrochemical industry through the same eyes." After the strike, the union and the National Toxics Campaign combined to hire a full-time organizer who could continue to foster ties between labor and the environmental movement.[69]



17. The Gateway to Cancer Alley? Gonzalez, Louisiana. The OCAW strike against BASF united labor and environmentalists against the chemical industry along the Mississippi River. This and other billboards popularized the link between the chemical industry and environmentally induced cancers. Source: Willie A. Fontenot.

A NATIONAL SACRIFICE ZONE

Three industrial catastrophes in the late 1970s and early 1980s firmly implanted in the public mind the image of the chemical plant as a dangerous monster. At Love Canal in Niagara Falls, New York, the irresponsible dumping of chemicals forced residents to move out of their homes. In Times Beach, Missouri, dioxin-tainted oil sprayed on the town's unpaved roads to keep down the dust ultimately polluted the town, which had to be abandoned and destroyed. (Dioxin is a term used to describe a number of toxic byproducts of the burning of chlorinated wastes. It is easily absorbed into human and animal tissues.) But the tragedy that befell Bhopal, India, in 1984 was beyond imagining. A methyl isocyanate leak at a Union Carbide plant killed 3,800 people and sickened 200,000. (Methyl isocyanate is an intermediate compound used in the production of insecticides and herbicides.) "Witnesses said that a densely populated area of about 15 square miles was turned into 'one vast gas chamber.'"[70] The following year a leak at another Union Carbide plant in Institute, West Virginia, served as a warning that Bhopal could happen anywhere.[71] It was

becoming clear that industry could no longer be trusted to protect the general population.

Soon after these tragic events, Congress mandated that the EPA produce a Toxic Release Inventory (TRI) of 328 toxic chemicals, specifying where in the United States each of these substances was used or produced. This would make it possible for individuals and their consultants in a community to know with some degree of reliability the specific chemicals and other toxins that were being released into the air, water, and land around the factories. The EPA made copies of the Toxic Release Inventory available to the public through the Government Printing Office, local officials, and public libraries in 1989.[72] Based on information supplied to it by industry, the TRI became, in the words of *USA Today*, "A First Peek 'Behind the Plant Gates'" and a basic tool in community organizing efforts, providing activists with critical information in their struggles to identify the grossest polluters.[73] According to *Chemical Week*, the TRI effectively "branded Louisiana as the most polluted state in the U.S.—because of its chemical plants."[74] Agrico-Chemical on the Uncle Sam Plantation in Convent was identified as the "leading water polluter" in the nation.[75] Larry Adcock, plant manager of Dow Chemical in Plaquemine, acknowledged that "the TRI numbers were so big that they just scared the hell out of everybody."[76] And the entire nation would soon hear from Oprah Winfrey that the lower Mississippi was "a national sacrifice zone . . . [where] lives are being forsaken."[77]

Two kinds of environmental groups operated in Louisiana. Long-established organizations like the National Wildlife Federation, the Sierra Club, the Audubon Society, and the Nature Conservancy had active state chapters that addressed issues like the maintenance of the natural ecology and even of historic sites like old plantation homes. Newer groups like LEAN and Greenpeace had active chapters in Lake Charles (in western Louisiana), Baton Rouge, St. James Parish, and other river communities. The newer groups formed alliances with African American and Cajun organizations to address the ill effects of industrial plants on their communities. These activists were angry that the factories offered neither economic revival nor sensitivity to the sanctity of their neighborhoods, homes, and lives; the factories promised only to reap great profits for big industry. These newer activist groups were willing to engage in tactics foreign to the more conservative environmental groups. In 1988, Greenpeace activists challenging the Georgia Gulf Corporation in Plaquemine "partially plugged a wastewater pipe in the Mississippi River . . . to protest chemical waste dumping"[78] and in the 1990s unfurled giant banners on the dome of

the state capitol in Baton Rouge denouncing the collaboration of state officials with industrial polluters.

Also in 1988 a group of both radical and more traditional environmental groups, including LEAN, Greenpeace, and the Sierra Club, joined labor unions like the OCAW to form the Louisiana Toxics Project. This coalition staged "The Great Louisiana Toxics March"—from Baton Rouge to New Orleans—"to protest the destruction of the southern Mississippi region . . . an industrial wasteland of enormous chemical factories spewing filth on a massive scale."[79]

The Great Louisiana Toxics March began on November 11, 1988, in Devil's Swamp, just north of Baton Rouge. Once a pristine area famous for its abundant wildlife, Devil's Swamp had been designated a Superfund cleanup site as a result of its pollution by a chemical plant. Several hundred people assembled there—workers from chemical plants, their family members, and union and environmental activists. They walked south through towns along the Mississippi River and past nearly 130 chemical plants, spreading their message in placards and in song.[80] Organizers promised that thousands of people would walk for at least some part of the route, enjoying "red beans and rice, jambalaya, gumbo; rhythm and of blues, gospel, jazz, and zydeco; rallies, meetings, reports, forums, and workshops."[81]

It was an incredible scene as the sounds of Louisiana mingled with the rhetoric of environmental organizers. In Baton Rouge the marchers were addressed by Martin Luther King III. The march encountered opposition along the way, first in Paulina, a small town along the river, where four marchers were "warned off" of the ITO plant property for trying to talk to company officials, and then in Jefferson Parish, where the sheriff "demanded several hundred dollars for official escort services from the marchers." In Orleans Parish, where marchers had paid $200 for a parade permit, local officials demanded more money as payment for an escort through the town. After nine days, the marchers finally arrived in New Orleans, having garnered enthusiastic support from people along the way. Most significantly, the march was a huge step toward building the sort of environmental coalition necessary to take on Louisiana's chemical establishment in the coming decade.[82]

In 1988 Louisiana elected for governor a congressman named Charles E. (Buddy) Roemer, a Harvard-educated reformer who voters hoped would take on industry.[83] He replaced Edwin Edwards, who had been indicted by the federal government on charges of graft and other misdeeds. Roemer refused to take any industry money during his campaign, accepting only

18. The Great Louisiana Toxics March. In late 1988, a coalition of labor and environmental groups marched 100 miles from Devil's Swamp, north of Baton Rouge, to New Orleans. The march gathered the support of national civil rights figures such as Jesse Jackson and Martin Luther King III. Source: Willie A. Fontenot.

political action committee contributions. Calling his election a "revolution," Roemer brought into his government people with no ties to Louisiana's long-standing political machine or to petrochemical money.[84] He broke with Edwards's policy of "selling" commissionerships as part of his political patronage system; instead, he put an ad in the *Wall Street Journal* for the Department of Environmental Quality (DEQ) commissioner's position and received two hundred resumes, many from people associated with the chemical industry. Rather than hiring from the established networks of lawyers and industry people within the state, Roemer chose Paul Templet to be DEQ commissioner. As the head of Louisiana's first Coastal Management Program, Templet had taken on Chalin Perez, one of the most powerful political figures in Plaquemines Parish, over the issue of coastal wetlands management. (Perez's father, Leander Perez, had played a major role in the parish during the Civil Rights movement when he vowed to put any Freedom Rider who "invaded" his turf into the swamps of Plaquemines Parish, "where they would be eaten alive by mosquitoes."[85]) Templet left Louisiana in 1979 and continued his work on wetlands management in

American Samoa. He returned to the state to teach at Louisiana State University, where he was tapped by Roemer.[86]

In hiring Templet, Roemer threatened the Faustian bargain the state had made with the chemical industry—that the state would sacrifice its environment in exchange for the tax revenues and jobs the chemical companies would provide. Roemer increased funding to the Department of Environmental Quality, raising its budget from $25 million to $68 million by 1991 and more than doubling the number of its personnel, particularly those involved in the enforcement of environmental regulations.[87]

Under Templet's direction, the DEQ "required the state's top 36 polluters to produce new waste reduction plans within 60 days."[88] The DEQ had been in existence for only five years and, according to Templet, "had been a very quiescent agency."[89] While he headed the DEQ, the Louisiana legislature passed more than twenty new environmental laws and the department established eighty-one sets of regulations, far more than had been in existence up to that time.[90] He also introduced an "environmental scorecard" that tracked each company's air, water, and land pollution emissions. Companies that failed to improve their environmental record over time were stripped of state-granted tax exemptions. The scorecard signaled to chemical manufacturers that Louisiana could no longer be counted on for lax regulations of environmental pollution and for tax breaks with no strings attached.[91] In an attempt to "embarrass them into action," Templet spoke very publicly about the dangers that industrial pollution presented to Louisiana's citizens.[92]

Eight years after he left office, Templet recalled his "amazement" at the power wielded in Louisiana's state political establishment by the chemical and oil interests. He remembered that he literally feared for his safety when he challenged industry. But rather than seek refuge in obscurity, he decided he would become "very visible," in the hope that visibility would better ensure his safety. He started riding a motorcycle "because it was easier to see any tampering than with a car." Templet estimated that in the end he forced industry to spend an extra billion dollars for environmental controls[93] and that during the Roemer administration industrial emissions dropped 50 percent.[94] When Roemer's term was over, Templet returned to LSU only to find that his salary had been cut by $10,000 because, he believes, of pressure from industry which had begun to fund faculty members involved in environmental research.[95]

The chemical industry, wary of Roemer's "efforts to dispel Louisiana's image as lax on environmental enforcement,"[96] instituted programs to control environmental pollution in an effort to forestall intervention by the state.[97] A program called Responsible Care was set up by the Louisiana Chemical Association in 1988 to clean up the worst of its polluters and to dispel its own image as "environmental pirates," according to Bob Haun of the BASF plant in Geismar.[98] Just as often, the industry chose not to clean up its pollution but simply to buy out and remove an entire community, as it did with Morrisonville and Reveilletown. The buyouts were an implicit acknowledgment by industry that these towns were being polluted or would be polluted in the future.

The chemical industry saw Roemer's reforms as temporary roadblocks to its plans for further expansion in Louisiana. The industry knew that a state traditionally dependent on the chemical industry for tax revenues and jobs would be unwilling to block development of potential sites. Impoverished St. James Parish, which straddled the Mississippi thirty miles south of Baton Rouge, was one of many sites that were already zoned industrial and still had substantial tracts of plantation land available for development. In 1991 the state, clearly still eager to welcome more industry, planned to designate St. James Parish an "attainment zone," making it ripe for development by a chemical company.[99] Despite the rumblings by Roemer, the industry retained its long-standing influence in the legislature and could count on continued large tax breaks. As Randall Helmick, an industry representative, pointed out, Louisiana had a "tax equalization policy" that allowed the state to match or surpass the incentive programs of any other state, even those of neighboring Texas.[100] In other words, the Statehouse was bent on keeping Louisiana as attractive to industry as ever.

Even Roemer's reforms, which were essentially populist, were part of a move to open Louisiana to what Roemer considered "cleaner" chemical productions, particularly plastics. Roemer had sought to get ICI America, a Delaware firm, to build a plant in St. Gabriel Parish, promoting it as a clean project. He encouraged other plastics manufacturers to use locally produced feedstocks to produce polyvinyl chloride and other polymers, and he plowed resources into LSU to develop centers for polymer science and to train plastics engineers. A Taiwanese firm, Formosa Plastics, opened a plant at Point Coupee along the Mississippi to produce polyvinyl chloride pipe, using resins from a new Baton Rouge production unit. Roemer encouraged other international companies to consider Louisiana their American home. Louisiana increased its overseas marketing budget to promote foreign investment in the state, particularly investment by Japanese firms.[101] Roemer was clearly not intent on destroying the chemical industry, even if the industry was correct in believing that chemicals had "certainly lost its most-favored-industry status."[102]

Eventually Roemer alienated every political constituency in the state. After a quick start in which he passed an educational reform package, including pay raises for teachers, promoted environmental awareness, and reduced the state's dependence on the petrochemical industry, his administration initiated few more reforms.[103] By 1991, Roemer's popularity had so plummeted that he faced credible challenges from even such disreputable characters as David Duke, the former grand wizard of the Louisiana Ku Klux Klan, and former three-term governor Edwin Edwards, a man twice indicted for corruption—and recently convicted.[104]

Edwards won reelection, and his return to politics reinforced industry's long-standing prominence in the state government. Throughout the 1970s and 1980s, Edwards was as forceful a political figure as Huey Long had once been. In many ways he symbolized the corruption at the heart of Louisiana politics that made it only too easy for the industry to wield its power.[105] Despite Edwards's campaign pledges that he would not undo Roemer's efforts to improve Louisiana's environmental record, among his first acts as governor was to appoint Kai Midboe, an industry consultant, as the secretary of the state's Department of Environmental Quality. As a lawyer in Baton Rouge, Midboe had represented the oil and gas companies; his appointment was viewed by labor and environmental activists as an indicator of bad policies to come. The Oil, Chemical and Atomic Workers characterized Midboe (and some of Edwards's other appointees) as having "a track record of hostility to environmental concerns" and connections to the Louisiana Chemical Association.[106]

It didn't take long for Edwards to confirm the worst fears of environmentalists. "Louisiana grew up with the chemical industry," Edwards declared, and it was clear he was not one to try to challenge it.[107] The *Engineering News-Record* noted that it "took only two days in office [for Edwards] to scuttle an environmental tax abatement program it took his predecessor, Buddy Roemer, three years to set up." Roemer and Templet had set up a property tax exemption system that had linked tax breaks to compliance with "state and federal rules on emission control and pollution prevention."[108] Edwards, however, maintained that any linkage between corporate investment and environmental protection would necessarily discourage investment. The chemical industry cheered Edwards's action.[109] Kai Midboe also suspended the environmental scorecard, saying it was "a draconian burden on industry." Kevin Reilly, the new secretary of the Department of Economic Development, announced that Edwards was preparing to "rescind the scorecard altogether" because it put Reilly in an impossible position, making him "both a policeman and a salesman. The scorecard just hampered my efforts and I resented it."[110]

It was clear to industry that the state, from the governor on down, would "rather do things with industry than do things to industry," reported *Chemical Week*, which also noted that "the investment and regulatory climates in the state have improved."[111] The industry also sought to shift more of the tax burden away from the chemical companies and back to individual citizens. As *Chemical Week* observed: "In most of the U.S., about 40% of state revenues come from corporate taxes and 60% from income and other individual taxes; in Texas and Louisiana, the proportions are reversed."[112]

The companies and the state increasingly envisioned an international role for themselves, hoping to find foreign markets to deal with the overcapacity of the industry in the early 1990s. One industry executive pleaded with industry colleagues to "understand how bad over-expansion can be," stressing that the development of foreign markets was central to any successful business strategy.[113] By 1995, the head of the Louisiana Chemical Association (LCA) was trumpeting the industry's continued modernization program and expansion into foreign markets, becoming the second largest exporter of chemicals in the country: "One-quarter of Louisiana's chemical production is shipped internationally, so it's essential that plants here invest the capital necessary to retain world-class status."[114]

By undoing Roemer's reforms Edwards intended to reassure an industry increasingly attacked by established environmental groups and angry grass-roots organizations. "From parish to parish," *Chemical Week* remarked shortly after Edwards took office, "the local environmental movement may be the strongest of that in any industrial state."[115] Louisiana citizens would no longer accept that foul smells, polluted water, and chemical waste dumps were a necessary byproduct of economic progress. While Louisiana had only eleven designated Superfund sites (primarily because the state had not done the work necessary for the federal government to list all of them as such),[116] as many as one thousand areas were contaminated by chemicals. Some of these were in historic, well-heeled communities, and many others were in poor people's neighborhoods.[117] It is no wonder local opposition grew.

GOOD SCIENCE?

Given that state government in Louisiana showed little propensity for controlling industry, the task fell to environmental activists, who had long

depended on local residents to report suspected toxins to them. These activists would forward residents' reports to professionals for confirmation. For example, residents of St. Gabriel, located in the heart of Cancer Alley, had long worried that the Ciba-Geigy, Pioneer, and ICI plants, which produced chlorine, benzene, and a variety of herbicides, were harming the health of local residents.

Kay Gaudet, who owned a pharmacy in St. Gabriel, concluded from her daily conversations that many residents were being poisoned by toxins from these plants. She conducted an informal survey of the town of 2,100 people and discovered that 63 women suffered 75 miscarriages between 1985 and 1988, a seemingly large number in such a small community.[118] Gaudet, unaware of Peter Infante's studies of stillbirths and miscarriages in Ohio but armed with her own data, traveled to Washington to testify before a congressional committee on the environment. Her testimony generated an enormous amount of publicity because it came in the midst of the 1987 gubernatorial race.[119] Buddy Roemer, then a congressman, learned of Gaudet's work and called the Louisiana attorney general's office to suggest that it conduct an investigation of miscarriages in the area.[120] Soon local reporters flocked to the town, and with them came public health experts from Tulane.[121]

In short order, the Tulane School of Public Health and the CDC's Agency for Toxic Substances and Disease Registry joined forces to conduct a two-year epidemiological study of "midterm and late term miscarriages of women with documented pregnancies between the ages of 18 and 50 who lived in St. Gabriel, Carville, and Sunshine between 1982 and 1987."[122] Jim Gentry, an environmental activist and the community representative on the panel that reviewed the design of the study, "wanted the questionnaire to ask women who have suffered miscarriages how close they lived to chemical plants and to describe pollution in their neighborhoods." Tulane and the CDC rejected these and similar suggestions as too subjective and not quantifiable, causing Gentry to conclude: "I think the study will be good science, but I'm not sure it will be complete science."[123]

In 1989 the experts found the miscarriage rates statistically "were no higher than the state average," provoking an angry response from Gaudet and other local activists who were convinced of the validity of their informal finding.[124] Gaudet believed that the betrayal of her community was the result of a less than vigorous scientific study, designed by experts specifically to explain away what she had observed. She criticized the methodology of the epidemiological study: it covered too large an area; it included only documented pregnancies and miscarriages; and it did not include an

appropriate control group. She also criticized researchers for conducting interviews over the phone rather than going "door to door," thereby excluding poor residents who did not have phones and others unwilling to share personal information over the phone. She came to see this use of science as virtually useless as a community resource. "It's going to be this thing around your neck, having to deal with scientific papers that say there isn't a problem," she said. "Federal and state governments are not ready to take responsibility and admit what they've done to us."[125]

Looking back ten years later, Gaudet noted her own naïvité in thinking that science could ever fully satisfy communities affected by industrial pollution. She had come to fear that even the best science could not prove danger. "I would be very shocked," she observed, "if there ever was a study that was conclusive." The apparent rigor of the methodology itself actually served to hide the effects of toxic chemicals on the community: if such a "thorough" study failed to prove the relationship between chemical exposure and miscarriages, then, it was assumed at an official level that there must be no relationship. Scientists' inability to uncover the obvious in St. Gabriel led Gaudet to a deep skepticism about the science itself: "I would never encourage a community now to do a study."[126] Community activists in other parts of the state were having similar experiences. Even Florence Robinson, a biology professor from Southern University who lived in Alsen, the site of Devil's Swamp, believed that the state's insistence on statistical proof was little more than an attempt to avoid the issue and to shirk the responsibility for proving danger: "The burden of proof is on us [the residents]. That's not how it should be. . . . Can [local resident] Mrs. Pate prove that her rash comes from any particular chemical company?"[127]

Marise Gottlieb, an epidemiologist at Tulane University, studied lung cancer death rates in twenty southern Louisiana parishes in the early 1980s and concluded that those living within a mile of a chemical plant or refinery had a four times greater chance of dying of lung cancer than those living two to four miles away. She concluded that lifestyle factors could not possibly account for such dramatic differences. Critics from industry and elsewhere pounced on her conclusions, claiming that many other factors such as differentials in smoking rates might account for the differences. Gottlieb agreed that further studies were necessary to establish a causative relationship, but she could never get any further funding from industry: "We were making a lot of progress. You have to ask why it stopped." She assumed that she "was doing the 'wrong' kind of work" and surmised that "had I said there was no relation, everyone would have been happy." Instead of funding Gottlieb's work, the governor, Edwin Edwards,

appointed a task force to look at cancer research. It concluded in March 1984 that "the available data suggest no single cause for the high incidence of cancer in Louisiana."[128]

THE TUMOR REGISTRY

In the late 1980s Greenpeace brought in independent experts to break the impasse between local activists (and their few academic allies) and state officials. Using government data, Greenpeace published two studies indicating that harm to the Mississippi and to the health of those living near the river increased as the river flowed south to the Gulf of Mexico. The study showed that cancer rates were low in Minnesota, where the river originated, but increased dramatically by the time the river reached Louisiana and the gulf. Greenpeace concluded: "The increases along the river are stark, and cannot reasonably be attributed to chance."[129] While most critics, as usual, suggested a host of other factors that could explain these mortality patterns, one respected environmental newsletter, *Rachel's Hazardous Waste News,* asked: Does the epidemiological data gathered by sympathetic investigators "prove industrial pollution causes cancer? It does not. Does it make you think twice about moving into a high chemical neighborhood or neighborhood with lots of dumps? It does us."[130]

The dramatic gulf that had developed between community activists and conservative scientists and their business allies can be seen in a struggle in the 1980s over The Louisiana's Tumor Registry. The registry was established in the late 1970s by the Louisiana legislature. In 1983 it published its first volume, *Cancer in Louisiana,* which presented mortality data from cancer from the 1930s through the 1980s. Like more informal surveys before it, the registry indicated a high cancer death rate among Louisiana residents. By 1988, the Tumor Registry included data on cancer incidence as well as cancer death rates throughout the state; by the mid-1990s the registry comprised no fewer than eight volumes of data.[131]

In response, the Louisiana Chemical Association contracted with an epidemiologist, Otto Wong, who was consulting for the Chemical Manufacturers Association to evaluate the epidemiological evidence on carcinogenicity of vinyl chloride. Wong concluded that the Louisiana environmental data could not prove that cancer was caused by emissions but must be the result of the residents' lifestyles. "South Louisiana people tend to smoke more, eat low amounts of fresh fruits and vegetables, and work in high-risk industries associated with lung cancer." In addition to the dubious step

of including "high risk industries" under the heading of "lifestyle," he refused to accept that those industries had any effect on cancer rates among nearby residents. Wong called for "more quality research" to establish any link between environmental exposure to chemicals and cancer.[132] (See chapter 7 for more about Wong.)

About the same time, Vivien Chen and her colleagues at the LSU Medical Center in New Orleans began publishing annual reviews of the Tumor Registry's data in an attempt to explain the high mortality rates in southern Louisiana by comparing them with cancer incidence rates. They found that, with two exceptions, incidence rates in the parishes in the Cancer Corridor were similar to cancer rates for other populations throughout the nation, raising questions about the commonly held belief that there was a link between industrial pollution and disease. She recommended closer long-term studies and concluded that attention had to be turned to issues of elective personal behavior, not industrial clean-up. "Any effective cancer control programs in Louisiana," she maintained, "must emphasize and be directed towards prevention and cessation of tobacco use." She restated this conclusion in her annual reviews of the data from the Tumor Registry throughout the 1990s.[133]

The chemical industry used these studies to resist any claim by communities that pollution from chemical factories was dangerous. Trade association journals trumpeted the studies as "an opportunity to get at the truth about Louisiana and its reputation as cancer alley."[134] The Louisiana Chemical Association announced that Chen had proved to their satisfaction that the major problem in Louisiana had not to do with pollution but the "lack of early detection and limited access to needed health care." The industry even went so far as to suggest that environmental justice activists, by continuing to harp on toxic pollution, were in essence further delaying "efforts to initiate new programming to address those factors—tobacco, diet, access to care—that could significantly reduce cancer death rates."[135] Scholars from conservative think tanks also eagerly echoed Chen's conclusions. In a Cato Institute article titled "Does Environmentalism Kill?" the writer detailed Chen's data and then concluded that environmentalists themselves were responsible for the high mortality rates by opposing industry attempts to bring new jobs and resources to the region.[136]

Many local activists and even some elected government officials reacted in a dramatically different way. They saw Chen's studies as seriously flawed in both design and methodology. Robert Kuehn, the head of the

Tulane Environmental Law Clinic, complained that close study of her data did not "readily allow identification of childhood cancers" and that she obscured specific local cancer rates by failing to present "cancer data by the Parish of occurrence but instead grouping Parishes by broad . . . regions." He also summarized criticism by others that the registry failed to report on "the numerous tumors by residents of Louisiana that are detected by out-of-state hospitals."[137]

Richard Ieyoub, writing both "as a parent, and as Attorney General of the State of Louisiana," likewise complained that the "childhood cancer data is not presented in Volume 8(1) in a way that would readily allow identification of those rare childhood cancers and the parish of occurrence of such cancers which have, apparently, appeared in some locations in Louisiana in unusual numbers." The attorney general, elected in 1995, was concerned about the issue of "'clusters' of rare childhood cancers [that] have been detected in specific locations in Louisiana." He objected to the fact that the broad parameters by which the registry categorized cancer deaths hid specific children's cancers and failed to identify small clusters. The fact that the registries reported cancer by region (which combined a number of parishes), when in fact the Toxic Release Inventory was organized by parish, made it impossible to link pollution to the clusters in particular communities. "Such grouping of parishes and presentation of cancer incidence data by 'region' may obscure differences in cancer incidence which may exist between industrial and agricultural parishes—and . . . may obscure other important intraregional differences."[138]

James Cox, a state senator from Calcasieu Parish, where Lake Charles, the other major center for the petrochemical industry is located, extended the complaints of Kuehn and Ieyoub in a letter to Chen. Cox complained that the Louisiana Tumor Registry was incomplete because "numerous cases of cancer in citizens in my district are not diagnosed here in Louisiana." Many of his constituents traveled to Texas, he held, and many other Louisiana children went to St. Jude Children's Hospital in Memphis, Tennessee. "I have been informed . . .that you admitted that there were no current reciprocities for data exchange with out-of-state hospitals frequently used by Louisiana residents," he observed. Cox objected to the differences between Chen's public and professional presentation of the very same data, observing that the limitations of her study, though reported in professional journals, were absent in her public statements about the relationship between childhood cancer and the chemical exposures. "One certainly cannot make any general statements that there is no increased incidence of

Cancer in Louisiana, if all of the data has not been compiled."[139] Paul Templet, the former Department of Environmental Quality administrator and now a professor of environmental science at LSU, also criticized Chen's epidemiology for not finding a method for associating distance from chemical plants to birth defects and other illnesses.[140]

It became distressingly clear that communities could not depend on outside scientific experts to corroborate their anecdotal evidence of a link between chemicals and disease. In fact, the net effect of hiring experts tended to be to weaken the authority of communities by making those experts the sole arbiters of truth. In community after community in the Louisiana toxic corridor, residents performed surveys that uncovered significant health problems, only to discover that what was so obvious to them was not confirmed by the professional epidemiologists. While residents looked to a broad array of indicators to show that pollution was hazardous, the state's epidemiologists usually focused on one particular bodily insult—usually cancer—as representative of community health status.

The story of the development of vinyl chloride plants in Louisiana is one of collusion between industry and state government. Louisiana appealed to industry for a number of reasons: it had a rich supply of natural resources, a state government eager for the jobs and tax revenue industry could bring, and the remnants of a plantation system that left African Americans poor, in need of work and, until relatively recently, too disenfranchised to pose much of a threat to industry. The petrochemical industry moved right in, leaked and pumped its chemicals into the environment, and ignored any indications of the toxic nature of its product. Where some saw an attempt to exploit and develop the state's natural resources—oil, gas, salt, and port facilities—for the benefit of the people of Louisiana, others saw a confirmation of the state's commitment to industries which would blithely exploit the land and the people for the benefit of their shareholders.

Sociologist Robert Bullard sums up the situation in America's chemical heartland: "By default, the region has become a . . . sump for the rest of the nation's toxic waste. A colonial mentality exists in the South, where local government and big business take advantage of people who are politically and economically powerless. Many of these attitudes emerged from the region's marriage to slavery and the plantation system, which exploited both humans and the land."[141]

What was occurring in Louisiana was an extreme example of a problem that was facing environmentalists and consumer advocates across the

country. A recalcitrant industry, joined by a conservative political establishment, was threatening to undo years of environmental legislation and reform. Through corporate contributions to political leaders and the establishment of numerous political action committees, business was testing the very boundaries of democracy.

9

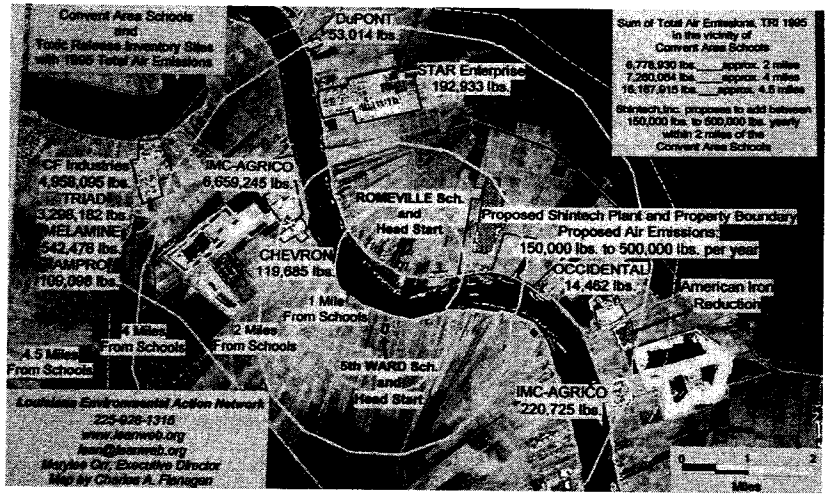
A Hazy Mixture

Science, Civil Rights, Pollution, and Politics

Driving south from Baton Rouge on Interstate 10, one passes through suburbs and strip malls and comes to Louisiana Route 44, which winds south to the east bank of the Mississippi River. Route 44 continues past old plantations, monuments to slave rebellions, and an African American history museum housed in an old plantation where gowned ladies give guided tours. Soon the landscape of pastoral towns gives way to giant industrial complexes spread out along what now becomes the River Road. To the west, a huge levee hides the Mississippi River from sight and blocks river access from the desperately poor communities interspersed among the industrial plants.

Cracking towers and brightly burning gas plumes dominate the landscape. Giant pipes straddle the road, crossing overhead to join refineries and granaries on the left to the river ports and docks on the right. Signs identify old plantations that are now home to sprawling chemical and grain storage facilities. Metal pipes—some glistening silver, some red with the dust of bauxite, used to make aluminum—run along the road.

As one drives past the old Uncle Sam Plantation, site of IMC Agrico's Uncle Sam Plant, one enters the town of Convent, which was named for the Convent of the Sacred Heart established in 1825 on that site by French missionaries.[1] Convent appears to be little more than a string of houses, trailers, and plants. The town center is composed of a parish office building, the Catholic church, and a post office. A gas station with a small general store serves as the central market. The northern part of town, called "Freetown" (for the former slaves who settled there in the 1860s), is where Shintech, a Japanese-owned plastics company, proposed to build a giant plastics manufacturing facility in 1996. The residents, mostly African Americans, live in dilapidated wooden houses reminiscent of old slave quarters



19. Map of Convent and vicinity. This map of the Convent, Louisiana, region shows the siting of chemical plants in relation to schools. It also indicates the proposed site of the operation that Shintech later abandoned. Source: Louisiana Environmental Action Network (LEAN).

situated on dirt roads that meander away from the river to dead-end in fields abutting huge mountains of industrial waste. One such dirt road, "so narrow that the postman won't drive down it," borders the huge sugarcane fields of the former St. Rose, Helvetia, and Wilton plantations.[2] It is here that the community mounted a protest that resulted, for the first time, in the federal government's pre-empting the authority of state officials and industry over the issue of environmental justice and environmental racism.[3]

The three-mile by one-hundred-mile stretch of land between Baton Rouge and New Orleans, where Convent is located, is the very heart of "Cancer Alley." Behind the levee, more than one hundred firms manufacture sulfuric acid, ethylene, fertilizers, petrochemicals, and vinyl chloride. In 1995 these companies poured more than thirty-eight million pounds of toxins into the air, soil, and water. The EPA now requires these companies to report toxic releases to the federal government, so it is a matter of record that the alley contains approximately 40 percent of Louisiana's plants that "contribute 53% of the total TRI air releases in the State."[4] These industries largely account for Louisiana's ranking as one of the most heavily polluted states in the country in the 1990s.[5] According to the EPA, "Louisiana industries had the largest total toxic releases from 1989 to

Table 9.1. Toxic Air Pollutant Releases (Averaged) per Person per Year (1995)

United States (12.1%)*	7 lbs/person
Louisiana (30.8%)	21 lbs/person
Corridor parishes (36.8%)	27 lbs/person
St. James Parish (49.6%)	360 lbs/person
Convent area (83.7%)	2,277 lbs/person

*Percentage of the population that is African American.

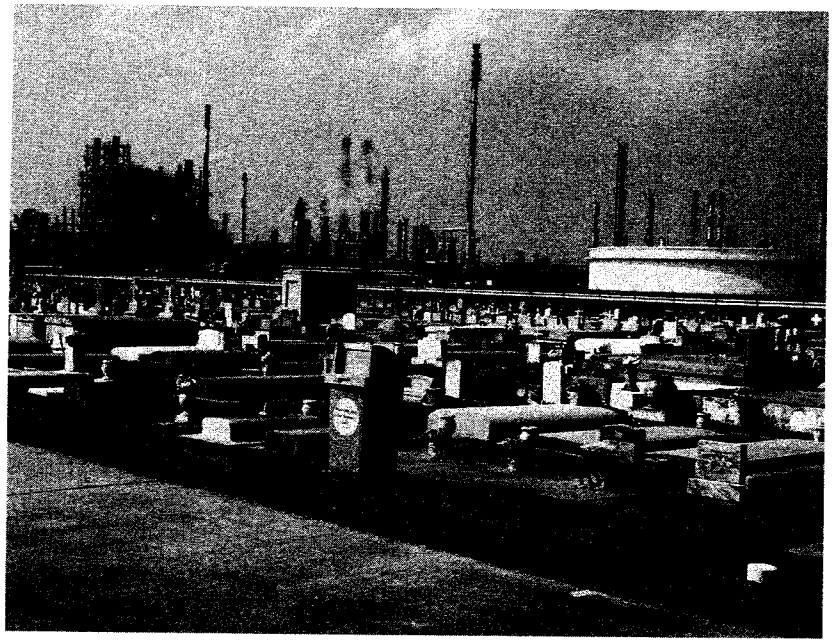
SOURCE: "From Plantations to Plants: Report of the Emergency National Commission on Environmental and Economic Justice in St. James Parish, Louisiana" (September 15, 1998). Data were drawn from the 1995 federal Toxic Release Inventory, TELC.

1993," second only to Texas in the years 1994 to 1997.[6] Twenty-four percent of the state's population and 34 percent of its African American population live there.[7] While on average, 7 pounds of toxic materials were released nationwide into the air for every person living in the United States as a whole, 2,277 pounds of pollutants were released into the air for every person living near Convent (Table 9.1).[8]

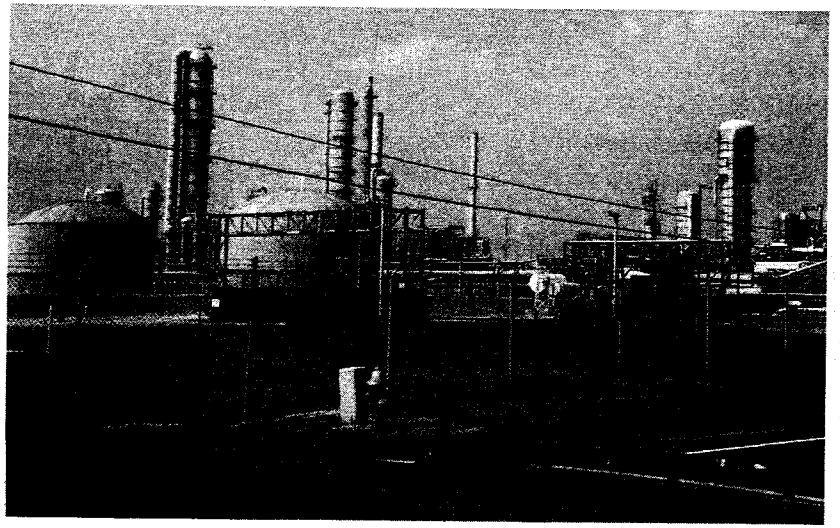
The effect of these chemical emissions on the health of the population appears quite significant. According to the Deep South Center for Environmental Justice, rates of leukemias and lyphosarcomas, breast cancers and colon cancers are much higher here than would be statistically predictable.[9] The population living here felt powerless to oppose industry. But all this would change.

In October 1996 the Shintech Corporation, one of the world's largest producers of polyvinyl chloride plastic, announced plans to build a massive integrated vinyl chloride plant on a 3,700-acre sugarcane field in Convent. Shintech hoped that by 2005 the facility, which would cost $700 million to build, would be manufacturing up to 1,000,000 tons of polyvinyl chloride a year, with a projected 11 percent increase in air pollution.[10] Given the industry's history of unbridled expansion, Shintech could not have imagined that the small community of Convent would ultimately see to the demise of its plans.

The state of Louisiana, Republican governor Murphy J. (Mike) Foster, and the administrators of the Louisiana Department of Environmental Quality (DEQ) all eagerly committed themselves to supporting Shintech, which promised to create about 165 jobs. In anticipation of bountiful revenues, the state promised to award Shintech a ten-year industrial property tax



20. Holy Rosary Cemetery, surrounded by the Union Carbide chemical plant. This graveyard, in the midst of a huge chemical plant, was once just outside the now-vanished Mississippi River town of Taft, Louisiana. Source: David Rosner and Gerald Markowitz.



21. Chemical plant, north of Convent. The IMC-Agrico Uncle Sam Plant is one of the many chemical complexes that dot the Mississippi River banks between Baton Rouge and New Orleans. Source: Gerald Markowitz and David Rosner.

exemption of $94.5 million, or approximately $787,000 as a subsidy for each permanent job created.[11] In May 1997 the DEQ issued four air quality permits to Shintech, clearing the way for construction to begin.[12]

Convent residents immediately organized protests against the building of the plant, appealing to the Environmental Protection Agency to overrule the hasty decision by the DEQ. The EPA, for the first time in its history, responded by holding up air and water permits until certain technical aspects of the plant's impact on water and air quality were cleared up and questions of environmental justice were investigated. In the end, Carol Browner, administrator of the EPA, did not have to decide on the permits because Shintech chose to withdraw its proposal.

ENVIRONMENTAL RACISM— ENVIRONMENTAL JUSTICE

Back in February 1982, when President Reagan appointed Anne Gorsuch administrator of the EPA, it was clear that he meant to dismantle the agency in fact if not in name. In the first year or so of the Reagan administration, "no new enforcement cases were filed by the EPA against hazardous waste sites," although there were "more than eighteen thousand sites around the country [that] were known to EPA to qualify for clean up under the legal definition of Superfund."[13] It became clear to the public that "unlike its predecessors, the Reagan administration could not be trusted to protect the environment."[14]

A reinvigorated and much more confrontational environmental movement rose up in response. Many people "joined environmental organizations for the first time, producing sizable membership gains for many of the national organizations in the 1980s."[15] Mainstream environmentalism had its roots in conservationist and preservationist values, however, and was seen by many African Americans as a decidedly white, middle-class movement often oblivious to issues of economic and racial justice. For Whitney Young, head of the Urban League, "the war on pollution . . . should be waged after the war on poverty is won." He saw the environmental movement as diversionary, "ignoring the most dangerous and most pressing of our problems."[16] Furthermore, traditional environmentalism had at times been associated with some of the more reactionary social movements of the twentieth century, such as the often racist eugenics crusade, further undercutting African American support for the movement.[17]

Two particular cases pointed to the role of racism in decisions to site sources of pollution in poor neighborhoods. In the late 1970s an African American community group in Houston, Texas, sued the city for placing a

landfill in its neighborhood. The residents ultimately lost the case, but the suit was of value in that it documented that the city had sited incinerators, landfills, and other waste sites in poor black and Hispanic neighborhoods.[18] In 1982 in Warren County, North Carolina, five hundred people were arrested for protesting the county's plans to build a hazardous waste facility in their community. Benjamin Chavis Jr., then of the United Church of Christ and later the executive director of the National Association for the Advancement of Colored People (NAACP), coined the phrase "environmental racism" to denote the "mounting evidence of discrimination" in environmental decisions.[19] In 1987 Chavis and the United Church of Christ published *Toxic Wastes and Race in the United States,* the first systematic analysis of the placing of toxic waste sites in poor communities.[20] In 1990 Robert Bullard published *Dumping in Dixie.*[21] The same year, a group of academics and environmentalists gathered at the University of Michigan for the Conference on Race and the Incidence of Environmental Hazards. Afterward its leaders met with the first Bush administration's EPA administrator, William Reilly, to request that the EPA investigate the use of race as a determinant of environmental policy. Reilly acknowledged the legitimacy of their concerns by establishing the Environmental Equity Work Group.[22] The following year, more than six hundred people attended the First National People of Color Environmental Leadership Summit, organized by Chavis, Bullard, and others in Washington, DC.[23]

By the 1990s organizations in Louisiana and around the country were documenting the fact that a disproportionate number of chemical plants were being placed in minority communities. Greenpeace found that the percentage of vinyl chloride monomer and ethylene dichloride plants situated in minority communities in Louisiana was "237 percent greater than the national average."[24] Beverly Wright, Pat Bryant, and Robert Bullard documented the efforts of communities up and down the Mississippi River to stop the establishment of plants and reduce toxic releases of "more than two billion pounds between 1987 and 1989." These toxins were being released into many working-class river communites, for example, Alsen, where more than 77 percent of the residents (98.9 percent of whom were African American) owned their own homes.[25] Eleven lead smelting and plastics plants, a hazardous waste incinerator, and two Superfund sites had made the area almost unlivable for residents. (The Superfund, the popular name for the Comprehensive Emergency Response, Compensation, and Liability Act of 1980 (CERCLA), established a priorities list of polluted sites and identified polluters who were to be held responsible for funding a reclamation effort.[26]) The Devil's Swamp area in Alsen had once been "something like

out of a Walt Disney movie" with "beautiful lakes and the cypress trees and white cranes and the blue herons," according to E. W. Pate, a local resident.[27]

But by the late 1960s nearby chemical plants had dumped so much noxious waste there that fires began to erupt. In 1969, the levee broke and "hundreds of thousands of contaminants [were] spilled . . . into the Mississippi River."[28] The trees died, the birds disappeared, and the fish developed tumors. Residents started complaining to the state about their own physical ailments; some could barely work in the soil of their own backyards because toxic chemicals burned their eyes and skin. Others experienced chronic headaches, bloody noses, and skin rashes. While state officials acknowledged residents' exposure to various chemical pollutants, in the absence of "hard evidence" from the community they would not accept that these chemicals caused the health problems residents were experiencing. "They have to come up with a little bit more information than that for me to start delegating or redirecting my resources," remarked Kai Midboe, Governor Edwin Edwards's head of the Louisiana Department of Environmental Quality in 1993.[29] Midboe excused his inaction by explaining, "I cannot address concerns [of] people that—you know, when people say 'I feel' or 'I'm concerned' or whatever." Rather than attribute it to pollution, state officials agreed with the Louisiana Chemical Association that the "higher than normal death rate from cancer" in Louisiana was due to "lack of early detection, [and] lack of proper health care."[30] (See chapter 8, page 259, endnote 135.)

The obligation of the federal government to respond to environmental justice issues derives from Title VI of the 1964 Civil Rights Act, which prohibited discrimination by any program or agency that received federal funds. The EPA established an "elaborate administrative procedure" for citizens to follow to file civil rights complaints against any recipient of EPA financial assistance, including the Louisiana DEQ.[31] Even more attention was paid to environmental racism during the Bush administration. In February 1992 the EPA's Equity Workgroup issued a report titled *Environmental Equity: Reducing Risk for All Communities,* which noted the dearth of reliable information regarding the relationship between environmental hazards, class and race. The March issue of the *EPA Journal* focused on questions of equity and environmental pollution. All of this activity generated tremendous media attention and later in 1992, the EPA established the Office of Environmental Justice to monitor the effects of industrial pollution on minority and poor communities.[32]

Nonetheless, the EPA failed to take action in numerous cases where industries had placed polluting plants in minority communities like those in the Mississippi River corridor. "The illegal discrimination in siting

unwanted facilities became so rampant and so obvious," one scholar asserted, that in February 1994, President Bill Clinton issued Executive Order 12898,[33] which directed all federal agencies to "analyze the environmental effects, including human health, economic and social effects, of federal actions, including effects on minority communities and low income communities" and to "make achieving environmental justice part of [federal agencies'] mission."[34]

This order was taken by industry as a dangerous sig-nal that the federal government was prepared to intervene on behalf of aggrieved citizens. As the *Oil & Gas Journal* stated, it was "economic and racial poison loft[ed] on wings of pretty-feeling words."[35] In Louisiana the chemical industry feared that "Louisiana is a real test-bed [of the environmental justice movement] because we have so many plants in rural areas."[36] Daniel Borne, president of the Louisiana Chemical Association, maintained that the decisions to place so many factories in poor and African American communities along the Mississippi was based not on race or class but on economics: here was cheap land and good access to the river. Industries were also looking for communities that historically had offered little political opposition.[37]

LOUISIANA—THE STATE RUN BY A BUSINESSMAN

The real battle between the chemical industry and local community groups, the state and the federal government would erupt in 1995 when Mike Foster, a wealthy, well-connected Republican, was elected governor of Louisiana. (Foster had strategically switched from the Democratic to the Republican Party before the primary, thereby overcoming a splintered field of opponents that local reporters referred to as "Noah's Ark" because it contained "two white female Democrats, two black Democratic congressmen, and two former Republican governors.")[38]

Foster, who had made his fortune in sugar farming and oil, quickly formed alliances with some of the most reactionary and racist public officials in Louisiana and the nation. He was the only governor to support Pat Buchanan in the 1996 Republican presidential race. The Louisiana branch of the National Association for the Advancement of White People gave him its vote of confidence.[39] Several years later a grand jury investigated a revelation that Foster had had secret dealings with David Duke's campaign organization during the campaign, paying Duke $152,000 for a mailing list of 80,000 Duke supporters.[40] A month after taking office, Foster "announced an end to state affirmative-action programs and declared that racial discrimination no longer existed."[41] Foster's environmental policy

clearly consisted of making the state friendly to the chemical industry; he wanted a "DEQ chief who 'works with industry on a non-adversary basis.'"[42]

By 1996, the state's dependence on the chemical industry had reached its zenith. Of the $2.44 billion in new investment in Louisiana in 1996, fully $1.23 billion, or 50 percent, came from the chemical and allied products industry. The "next closest sector was petroleum refining, with $341 million."[43] By 1997, in an article titled "Gulf Coast Fishing: Luring Firms with State Incentives," *Chemical Week* enthused that "chemical projects accounted for almost 60%—more than $2.2 billion—of Louisiana's total industrial investment of $3.8 billion in 1997, and the chemical industry's share of 1998 projects announced so far is outpacing last year."[44] As Kevin P. Reilly Sr., the secretary of the state's Department of Economic Development, said, "The Louisiana chemical industry is a driving force in the state economy and a major component of the U.S. chemical sector," accounting for one quarter of the nation's petrochemical production.[45] Lawrence C. Scott, an economist at Louisiana State University (LSU), predicted in 1996 that the chemical industry would add at least six hundred jobs over the next two years.[46]

But not everyone was so pleased about this growth. Some political leaders believed that Louisiana was "relying too much on the oil, gas and petrochemical industry." Even though the economy was booming in the mid-1990s, some feared that the state was being lulled into a complacency that would inhibit creative planning for the future. "The urgency for diversification has disappeared," declared Jerry Luke LeBlanc, the chair of the Louisiana House Appropriations Committee.[47]

In 1996 Foster's administration was quite open about its willingness to cater to industry. His office ran an ad in the *Wall Street Journal* bearing the heading, "Louisiana—The State Run by a Businessman." The ad depicted a government official bending over backward, asking, "What has Louisiana done for business lately?" while the copy below pointed out that during a time when lawsuits plagued industry, Louisiana could offer limits on corporate liability, a prohibition against punitive damages, and the requirement that plaintiffs prove negligence.[48] By 1997 Foster's Department of Environmental Quality had not only backed away from any confrontations with the industry, but also had reduced penalties and fines on industrial polluters by nearly 90 percent from Roemer's 1989 levels; in 1997 industry's total penalty assessment was $736,000, down from more than $8 million in 1989. Robert Kuehn, head of Tulane's Environmental Law Clinic, pointed out that the "signal the State is sending from a profit

standpoint is that you might be better off breaking the law and taking your chances." The Louisiana Chemical Association praised the DEQ's program for promoting voluntary compliance, noting that "you don't make progress by harassing people to get compliance."[49]

Foster went even further than Edwards in removing environmental impediments to industrial development.[50] Toxic releases "in Louisiana increased by 8 million pounds, or 4.5 per cent from 1995 to 1996"[51] and by another 3 million pounds the following year.[52] Although Texas ranked number one in toxic emissions, Louisiana surpassed Texas in the amount of toxins emitted per person by nearly three to one.[53] In 1998, Paul Templet, the former head of Governor Buddy Roemer's DEQ, remarked that as a result of the pro-business policies of Foster and Edwards, "Louisiana's chemical industry releases are still four times the national average, and they appear to be rising again."[54]

This pro-business atmosphere was precisely what the chemical companies wanted. But some saw it as blatant collusion between industry and the state government. It was shortly after Mike Foster took office in 1996 that Shintech, the U.S. subsidiary of Japan's multinational plastics manufacturer Shin-Etsu, announced that Louisiana was one of three states under consideration for a giant plant. Shintech was planning a "manufacturing complex that would include chlor-alkali, ethylene dichloride, vinyl chloride monomer (VCM), and polyvinyl chloride (PVC) production." Shintech already had a plant producing 2.8 billion pounds of PVC in Freeport, Texas, but that plant depended upon Dow Chemical for its feedstock of VCM and Shintech wanted to be free from such dependence. The new plant would be huge by any standard; it would cost as much as $700 million to build and would produce the feedstock and plastic in one integrated process; its annual capacity would be 495,000 tons of chlorine, 550,000 tons of caustic soda, 1.1 billion pounds of VCM and 880 million pounds of PVC.[55]

The Louisiana DEQ's Kevin Reilly laid out for Shintech the lengths to which the state would go to encourage the company to locate in Convent: the Industrial Tax Exemption program exempted "new and expanding manufacturing facilities from local and parish *ad valorem* (property taxes) for a period of five years with a provision for an additional five years." The Louisiana Enterprise Zone Program authorized the state to provide "a one-time tax credit of $2,500 for each new permanent job added to the payroll at startup or during the next five years." In addition, the Industrial Revenue Bond program, the Inventory Tax Credit Program, the Freeport Laws, and the establishment of Foreign Trade Zones all sweetened the pot for Shintech.[56] (The Louisiana Coalition for Tax Justice estimated that a ten-year property tax exemption would total more than $94 million over ten years, including over $27 million in exempted school taxes. In addition, they estimated that as an enterprise zone, Shintech would receive an additional $412,500 in tax credits, plus tax rebates of $25 million.[57])

Nine months after Foster's inauguration, Shintech chose about six square miles on a former sugar plantation in Convent in St. James Parish.[58] St. James Parish, which straddled the Mississippi River forty miles north of New Orleans, had approximately 21,000 residents and more than a dozen industrial plants, "including two petrochemical plants about two miles from the proposed Shintech site."[59] In July 1997, the Louisiana Department of Environmental Quality issued Shintech three separate construction and operating permits for plants to produce chlor-alkali, vinyl chloride mono-mer, and polyvinyl chloride, maintaining that "adverse environmental impacts had been minimized or avoided to the maximum extent possible."[60] Although the plant would emit methanol, vinyl chloride, ethylene dichloride, chloroform, carbon tetrachloride, hydrochloric acid, chlorine, and ammonia[61] and might have deleterious health effects, the Louisiana DEQ concluded that the "social and economic benefits of the proposed Facility will greatly outweigh its adverse environmental impacts. Notably, the Louisiana constitution requires balancing, not protection, of the environment as an exclusive goal."[62]

In 1998 *Time* magazine featured Louisiana in a special report ("Louisiana No. 1 in Terms of Subsidies per Capita") that linked tax breaks for large companies and the state's heavy industrial pollution and extreme poverty. During the 1990s, the article reported, Louisiana "wiped off the books $3.1 billion in property taxes alone," claiming this was necessary to attract jobs to the state. *Time*'s analysis noted, however, that Louisiana paid huge amounts in lost revenues for the few jobs created. For the nine jobs created by Dow Chemical in Plaquemine from 1988 to 1997 the state paid a total cost of $96 million in tax breaks and other incentives, or $10.7 million per job. Georgia Pacific, also in Plaquemine, cost the state $46 million for 200 jobs, or $230,000 per job.[63] Paul Templet noted that "as these subsidies rise, the income disparity between the rich and the poor rises."[64] In June 2000 the *New York Times* reported that Louisiana had the "second highest poverty rate of any state . . . and the gap between its wealthiest and poorest residents is the nation's widest and is growing."[65]

The loss in state taxes mostly affected public works projects, road and bridge maintenance, schools, and medical clinics. Since industries were generally located along the river in economically distressed and politically disenfranchised black communities, those communities bore the brunt of

the lost revenues.[66] "In some Louisiana parishes . . . 20% or more of the industrial property taxes goes to education. So every tax break granted to a company translates into less money for schools," noted *Time*.[67] Templet believed poor services, a weak educational base, and especially pollution would undermine the long-term financial health of the state. He wrote that "a clean environment not only is good for business, but is probably a necessary condition for a healthy economy over the long term."[68]

The loss of tax revenues for education left Louisiana with a profound dilemma. The state sought to attract high-tech companies that would pay higher wages, but by undermining the schools state officials made it impossible to provide a skilled workforce for these new industries. Still, the state clung to the chemical industry as its best hope for economic improvement. Loren Scott, an LSU economist, argued that it was self-defeating to deny the right to construct in these communities: "It's a tricky issue because if you deny these plants the ability to come into those areas, those people are almost assured of remaining low-income. You can bring in furniture production, textiles, food processing, but they are low paying industries. It means you work and still wind up poor." On the other hand, Scott pointed out, it was unrealistic to expect that the state would attract Silicon Valley industries "when you're next to last in [standardized test] scores and either last or next-to-last in high school graduation rates."[69]

The chemical industry would provide *some* opportunity. Robert Kuehn agreed that the lack of an educated workforce imperiled the state's economic prospects. But his analysis diverged dramatically from Scott's, as he observed that although the state's tax exemption policies might provide a few high-tech jobs for white professionals from outside St. James Parish or even from outside the state, it was an illusion to think that these industries would benefit the poor and poorly trained residents of these river communities.[70]

The residents of Convent knew that the residents of nearby Wallace had prevented the building of a chemical plant in their midst. When the Formosa Plastics Corporation, a Taiwanese-held company, wanted to build a rayon plant on the site of the 1,800-acre Whitney Plantation on the west bank of the Mississippi,[71] the company made the case that the plant would bring jobs and income. Wallace residents retorted that the chemical industry thus far had done little for the unskilled, largely African American, residents of their small community, but instead had hired skilled, generally white workers for all but the most menial positions. The proposed factories would require high-tech skills, which the local black residents did not have.[72] One survey in St. Gabriel, in Iberville Parish not far from Plaquemine, found that local residents held 164 out of 1,878 permanent jobs, or

8.7 percent.[73] Wilford Green, who had lived in Wallace his entire life, expected that the only jobs available for African Americans in Formosa Plastics' proposed plant would be "the same kind of job that my father had —cleaning the yard, cutting the grass, cleaning the toilets. Are we going to have administrative jobs? Nobody's saying that to us, no!"[74]

Furthermore, many residents feared that industry would bring more air pollution and disease to their community. Many of the companies receiving the greatest subsidies were the filthiest and most damaging to the river region's sensitive ecology. For example, IMC-Agrico, which received $15 million in property tax relief between 1988 and 1997, was a major polluter in Louisiana, releasing 12.8 million pounds of toxic chemicals in the manufacture of fertilizers and other chemical products; Rubicon, Inc., a chemical company in Geismar, released 8.4 million pounds of chemicals and was exempted from $9 million in property taxes; Monsanto released 7.7 million pounds of toxic chemicals but Louisiana "excused Monsanto from payment of $45 million in property taxes over the past decade."[75]

Just as industry feared, the Clinton executive order provided some legal and political clout for the residents of St. James Parish wishing to protest. Emelda West, a seventy-one-year-old African American woman who was one of the prime movers of the group called St. James Citizens for Jobs and the Environment, which opposed Shintech's plans, said of Clinton: "I don't guess he knew I existed. But he did have people like me in mind."[76] West is a widow whose college-educated children had been forced to leave the state because of the lack of opportunities. Being a charismatic speaker of extraordinary energies, she proved to be an extremely effective organizer. She knew and talked to everyone in town about Shintech's plan, distributed leaflets, and took visitors on tours of the back roads near the industrial plants.[77] Once made aware of the possibility of another huge chemical plant in their area, residents began to act. St. James Parish already had nine chemical plants, and residents were not willing to watch Shintech erect another factory "within five miles of 11 other industrial facilities (nine of which were major sources on Louisiana's emission inventory system for toxic releases)."[78]

Some wrote to their newspapers. One woman complained that she didn't "want an additional 600,000 pounds of toxic air contaminants in my already-overburdened area."[79] Other women like Pat Melancon and Gloria Roberts joined Emelda West in protesting Shintech's plan to build in their backyard. Roberts, a retired schoolteacher, did much of the research documenting the demographics of the area around the proposed plant. Although

most of her neighbors had been bought out she refused to move from her split-level house surrounded by property owned by Conoco. Melancon, who was white and a retired teacher, was a major speaker on behalf of the parish's black, white, and Cajun residents. Together these women went door to door to warn neighbors of Shintech's plans and to galvanize opposition. They held meetings in churches, assembled petitions, wrote to state and national officials, and began to develop alliances with local and national environmental groups. They made contact with the Louisiana Environmental Action Network (LEAN) and Greenpeace, both of which had been carrying on statewide campaigns against the chemical industry.

Residents knew from their own experience with the existing plants in St. James Parish that in addition to the usual pollution, emergencies and chemical accidents were common occurrences. Residents were often awakened by sirens or alarmed by radio alerts warning them not to leave their homes or workplaces. The smell of solvents continually wafted through the air, making it hard for residents to believe the companies' assurances that nothing was amiss. Residents were particularly anxious because, in the event of a major accident or explosion that might release massive amounts of toxic chemicals into the air, evacuation would be nearly impossible. They feared they would be trapped by dead-end streets, the narrow River Road, and railroad tracks that crisscrossed the area. Furthermore, chemical releases into the air could travel a mile in less than a minute, especially when hurricanes and other storms swept in from the Gulf of Mexico, whereas it might take even a responsible company as long as twenty minutes to detect releases and warn nearby residents.[80]

In nearby Ascension Parish, a 500,000-gallon storage tank at the Borden Chemicals and Plastics plant had exploded in 1997, its "detonation heard for miles around, forcing the closing of Louisiana Route 1 and the voluntary evacuation of some neighbors." The same plant had released eight thousand pounds of "hazardous materials," including vinyl chloride mono-mer.[81] In Lake Charles, to the west, the other major site of chemical and plastics production in the state, a jury found the Condea Vista Chemical Company liable for "wanton and reckless disregard of public safety" for dumping between nineteen million and forty-seven million pounds of ethylene dichloride, a feedstock for vinyl chloride monomer, into the lake itself. At the time, the company had admitted leaking only thousands of pounds of the suspected carcinogen and, had it not been for the lawsuit, the true extent of the spill would never have been revealed.[82]

Soon after beginning public protests against Shintech in the spring of 1997, residents met with lawyers at Tulane University's Environmental

Law Clinic in New Orleans.[83] For years the Tulane Environmental Law Clinic, a training ground for third-year students interested in environmental law, had played a significant role in a number of important challenges against industry in Louisiana. It represented residents of Ascension Parish in getting the state to enforce regulations for the underground storage of hazardous waste. It also represented the St. John's Citizens for Environmental Justice, the Congo Square Foundation, a Vietnamese immigrant association, and the local Audubon Society chapter in successful challenges in numerous environmental issues.[84] Together with community groups, the students quickly developed a legal and public policy strategy to force the EPA to intervene under a variety of federal statutes and regulations. They argued that the disproportionate impact of environmental pollution from the proposed plant on the poor, African American community of Convent would violate Title VI of the Civil Rights Act of 1964. The clinic further argued that the proposed plant's effluent would also violate Title V of the Clean Air Act.[85]

The threat of pollution from chemical plants was not unknown to the federal Environmental Protection Agency. Twenty years earlier[86] the EPA, while trying to reassure the public that vinyl chloride emissions didn't "pose an imminent hazard to people living near the plants," had to acknowledge "that some hazard does exist and that our population deserves the protection afforded by regulatory action."[87] The EPA estimated that VCM and PVC plants probably discharged two hundred million pounds of VCM and fifty million pounds of PVC each year into the nation's air, water, and soil.[88] It also "estimated that approximately 4.6 million people [who] lived within five miles" of the plastics plants were potentially exposed to levels of vinyl chloride monomer that could cause up to twenty extra angiosarcoma deaths nationwide.[89]

AND THEY'RE NOT IN IT FOR THE MONEY

The intervention of Tulane, the state's most prestigious university and premier law school, helped turn what was a local "not in my backyard" (NIMBY) movement into a statewide initiative that gained national attention from both the chemical industry and the U.S. government. The industry was aware of the public relations disaster it faced if the construction of a plant were stopped because the industry was found guilty of environmental racism. Until then no group had kept a company out because of environmental racism, although nineteen other environmental justice complaints were under consideration, three in Louisiana and six in Texas.[90]

As *Chemical Week* noted, the Shintech protests were much more dangerous and potentially precedent setting than protests in the past.[91] A victory in Convent would mean real trouble for industry in the future.

When local residents, in conjunction with Greenpeace and the Tulane Environmental Law Clinic, filed a complaint with the EPA, they challenged the traditional hegemony of the petrochemical industry in the state. The industry understood, as did Emelda West and other local residents, that the stakes had been raised. *Chemical Week* declared that the EPA's decision as to the validity of the residents' complaint would "offer the first insight on the EPA's interpretation of President Clinton's 1994 Executive Order requiring federal agencies to address the health and environmental effects of their policies on minority and low-income communities."[92] The publication agreed with opponents of the plant that "this is a test case with national significance that will demonstrate whether EPA is committed to carrying out the environmental justice [provisions of Clinton's executive order]."[93] In August 1997 the Office of Civil Rights of the EPA decided to accept "for investigation a complaint alleging that Louisiana Department of Environmental Quality (LDEQ) has violated Title VI of the Civil Rights Act of 1964."[94] The Tulane law clinic supplemented its complaint by documenting that the Shintech plant would be an even worse polluter than previously revealed. They asserted that the Shintech facility would produce up to 550,000 pounds of volatile organic chemicals like vinyl chloride monomer and 138,000 pounds of other toxic chemicals such as chlorine that would add to the 7.2 million pounds of toxins that were already emitted into the air in Convent.[95]

The reaction to the EPA's action was not uniformly positive. The Baton Rouge *Advocate* declared that the federal agency "hardly could have picked a worse place to try out this hazy mixture of science, civil rights, pollution, and politics."[96] But it was Governor Foster and the Louisiana Department of Economic Development that led the fight to save Shintech's plant. Given the state's long-term view that "chemicals drive the Louisiana economy," it is not surprising that they would portray the residents' protest as an attempt by "outsiders" to deprive a poor community of jobs.[97] Foster saw the staff of the law clinic as the chief culprits, calling them "a bunch of vigilantes out there to make their own law," and he claimed that Tulane's and Kuehn's actions were hampering the state's economic growth.[98] The state secretary of economic development, Kevin Reilly, accused the clinic of leaving "the university open to the charge of being irresponsible at best and pursuing elitist social engineering goals at worst."[99] Foster went so far as to threaten Tulane by calling for a re-examination of the tax breaks that

Tulane received from the state; he urged Louisiana businesses to stop donating to Tulane.[100] Robert Kuehn was bemused by all the fire directed at him personally and at the clinic. As he put it, "This group of citizens is up against the entire state government, not to mention Shintech's team of lawyers. Here we are a few student attorneys and a supervising lawyer. I'm not sure why they're all shook up."[101]

Kuehn certainly knew why the state was going after him and the Environmental Law Clinic. Established in 1989 in response to the environmental crises across the state, the clinic defended poor communities throughout the state from the actions of the chemical industry and the inaction of the state itself. In addition to responding to requests from local groups concerned about pollution issues, the clinic hired a community outreach coordinator to ensure that local communities were aware of the help the clinic could provide.[102] The Louisiana Environmental Action Network, which had been founded in 1987 and had helped organize the Great Toxics March, enthusiastically welcomed the clinic's students and their mission. LEAN's newsletter noted, "Louisiana's environment has a new lawyer, a whole office full of them—and they're NOT in it for the money."[103]

Edward Sherman, the dean of the Law School, and Eamon Kelly, the university's president, both refused to buckle under the governor's threats, arguing that the mission of law clinics is to defend those too poor to hire private lawyers, that the university had the right to academic freedom, and that under the law it was the obligation of the university to protect the citizens of Louisiana. Sherman reminded everyone that Tulane University, as the largest private employer in New Orleans, supported economic development, but "in representing the [Convent] neighborhood group the clinic is simply invoking the proper legal channels to enforce the environmental laws."[104] He praised the clinic, asserting that it had "been attacked so frequently, in part, because it has been effective. Its impact has been stricter enforcement of environmental laws."[105]

The threats against Tulane's Environmental Law Clinic were more than mere words. Opponents turned to the state Supreme Court in their efforts to stop the clinic from opposing Shintech's plant. The Chamber of Commerce of New Orleans and the River Region petitioned the court to re-evaluate the rules under which university law clinics operated in Louisiana. Robert Gayle, the president and chief executive officer of the chamber, wrote to Chief Justice Pascal Calogero accusing the clinic of trying to "push and impose the social views of the faculty and students in the courts of the state of Louisiana. . . . We respectfully request that proper amendments be made to discontinue the use of Supreme Court rules to

foster social positions left solely to the unregulated judgment of a faculty member capable of influencing and directing students to file suits [as] qualified members of the Bar."[106] In October the Louisiana Association of Business and Industry joined the chamber to object to Tulane's "obstructionist practices and [its] fostering social positions that conflict with the business community." The association "asked the court to amend rules that allow students to practice as attorneys."[107]

This was not the first time that a governor and the petrochemical industry had asked the court to "clip the wings" of the Tulane clinic. According to the New Orleans *Times-Picayune*, in 1993 the head of the Louisiana DEQ, Kai Midboe, at the urging of then Governor Edwin Edwards, "wanted the clinic muzzled so that he could get on with the job of making nice to the petrochemical industry."[108] Edwards himself had threatened to stop state funding for a new downtown basketball arena to be used by Tulane and to cut tuition assistance to Louisiana residents who attended the school.[109] To the surprise of many, the Louisiana Supreme Court summarily dismissed the state's requests to redefine the role of law clinics in defending the poor. The clinic was allowed to continue its work.

Having lost in the Supreme Court, the Louisiana chemical industry mobilized to try to take control of the Supreme Court itself by funding campaigns to defeat the liberal justices who had acted against their interests. Of the $577,256 donated to candidate Chet Traylor in his 1996 successful bid to defeat liberal Justice Joe Bleich, almost half came directly from oil and gas industry executives, their lawyers, and Louisiana business and industry.[110] When Chief Justice Calogero and two other judges faced reelection in 1998, there was reason to fear that the chemical industry would go after them.[111] The *Times-Picayune* attributed the upset in the court to political maneuvering, stating, "The Supreme Court is all of a dither. . . . It seems unlikely that the justices have suddenly discovered complexities in an issue summarily decided less than five years ago. Changes in the political landscape would seem to be responsible."[112]

In June 1998, the court ruled that the Tulane Clinic and all other law clinics in Louisiana could represent only individuals with incomes below the guidelines established by Congress for the Legal Services Corporation. In so doing the court delivered to industry the verdict it had paid for. The verdict meant that the clinics could represent only organizations where 51 percent of its members had incomes below these stringent guidelines and in cases where the group had no affiliation with any national organization. Because these qualifications were nearly impossible to meet, the ruling made it "more difficult for the poor and working poor to get representation

in complicated, expensive lawsuits, such as those involving environmental issues."[113] Harold Green, a community organizer for the Southern Christian Leadership Conference, the venerable organization founded by Martin Luther King Jr., declared that "for all intents and purposes, it pulled the rug from beneath our feet."[114]

Eamon Kelly, Tulane's outgoing president, was direct in his disgust over the narrowness of the court and its willingness to disempower the poor, African American communities of Louisiana. Kelly echoed the cry of the Civil Rights era in proclaiming that it was "almost impossible for the working poor, who in our state are disproportionately African Americans, to have access to equal representation before the law." "This is power politics, pure and simple. This is the Governor, business community and the courts combining to deprive the working poor of their right to counsel. . . . In a course I teach on the developing world, I describe some Third World countries where the poor and minorities do not have access to legal representation. It is sad to be able now to include Louisiana as a case study in my course."[115] Of course, Governor Foster saw it differently. "The court is finally tightening up on that bunch of outlaws trying to shut everything down."[116]

While the state had a long tradition of political corruption, usually it was a local affair; now Louisiana was under scrutiny from the rest of the country. As the New Orleans *Times-Picayune* described it, the "High Court [had become the] Target of Disgust." While the state Supreme Court had sometimes made "itself a state-wide laughingstock . . . this time the whole country is in stitches." Members of the American Association of Law Schools called for a boycott of New Orleans as a convention site because the court's decision was "a travesty" and "beyond the pale."[117] Robert F. Kennedy Jr., in an address to students at Tulane, denounced the governor and the Supreme Court ruling as shortsighted and antidemocratic. "If we want to do what Governor Foster wants us to do, treat the planet as a business in liquidation, we'll see a few years of economic prosperity. But our children . . . will inherit a denuded landscape, poor health, and lost resources." Kennedy identified Tulane and the law clinic as "the front line" of democracy, providing a progressive vision for the future.[118] In contrast to Foster's narrow vision for bringing Louisiana into the industrial twentieth century, Kennedy and others argued that Louisiana had an opportunity to advance to the twenty-first century. Louisiana, with its access to national markets through the Mississippi River and international markets through the port of New Orleans, was too crucial to the country's long-term development to allow local politics, a culture of political corruption, and the narrow interests of the petrochemical industry to supersede the nation's needs.

Under pressure of intense national scrutiny, the court loosened its ruling in March 1999, allowing clinics to serve people with incomes up to twice the federal poverty level. Still, as Robert Kuehn, director of the Tulane Environmental Law Clinic, pointed out, Louisiana remained the only state "with an explicit financial limit on representation." He felt the ruling forced "the group to ask its members how much money they earn as a condition of membership and that creates a chilling effect on belonging to a group or seeking the help of a clinic."[119]

THE BIGGEST COINCIDENCE OF THE YEAR

Industry officials probably never imagined that Tulane, LSU, and other universities in the state would ever be so ungrateful as to try to resist them, given that these universities received more support from industry than from any other entity in the state. The chemical, gas, and petrochemical industries, after all, "accounted for $28 billion of the state's $110 billion gross state product," and the industry had contributed mightily to the state's universities. Freeport McMoRan, one of the world's largest manufacturers of chemical fertilizers, contributed $2.5 million to LSU to start the Institute for Recyclable Materials, $1 million to LSU's cancer center and $1.6 million to the University of New Orleans for its Center for Environmental Modeling. C. B. Pennington, a leading oil man, gave LSU $125 million to construct the Pennington Biomedical Research Center and, when he died in 1997, his $250 million estate was distributed among the Pennington Research Center, the Pennington Foundation, and his grandchildren. Texaco donated "a twenty-year free lease for a building that houses [Tulane's] Public Health School facility." Freeport McMoRan contributed $1 million to Tulane's Bio-Environmental Research Center and Shell and Exxon contributed $2 million to Tulane's Environmental and Waste Management Program. Ethyl, Texaco, and Claiborne Gasoline all endowed an LSU chair, while Freeport McMoRan endowed a Tulane chair and two LSU chairs and Pennington endowed two chairs at Tulane.[120] As Barbara Koppel observed in *The Nation*, this was probably only the tip of the iceberg. "Efforts by journalists and others to get the universities to reveal their funding sources (apart from data about endowed chairs) have been stonewalled: Tulane's status as a private institution allows it to remain silent and although LSU is a public university, it created a private foundation through which it funnels its grants."[121]

Soon after the confrontation between Tulane and the governor, the Environmental Law Clinic's lawyers discovered that Kevin Reilly, the head

of Louisiana's Department of Economic Development, had joined with Shintech's public relations firm to compile files on and to investigate several groups that had opposed Shintech, among them the clinic and Greenpeace. Reilly had used state funds to compile an "enemies list," reported the *Times-Picayune*. When accused of using state funds to identify the tax status of one group that opposed the Shintech project, Reilly exclaimed, "You're darned right I looked up their records.... I'm going to use every legitimate method at my command to defeat them."[122]

Foster also worked to split the African American community by forging an alliance with the NAACP's state and local branches to persuade them to support Shintech. In August, Ernest Johnson, the head of the state NAACP, went to Convent with the governor to talk to residents about the proposed plant. The next month, Johnson announced that the state branch would remain "neutral" in the dispute, explaining that "the local chapter had endorsed the plant" because in an area with substantial unemployment, the plant promised jobs.[123]

More outrageous was what the Baton Rouge *Advocate* called the "biggest coincidence of the year."[124] It was revealed that the Louisiana Economic Development Corporation had approved a $2.5 million loan for minority businesses to a group headed by Johnson on the very day that he had announced the NAACP's neutrality. Although Governor Foster said that any suggestion of "linkage is really ugly and unpleasant and I'm offended by it," a *Times-Picayune* investigation reported that the state agency had "rejected staff recommendations and waived procedures to approve" the grant.[125]

This seedy attempt by the governor and state officials to promote the chemical industry's interests at any cost and to undermine local opposition to a polluter erupted into a national firestorm in September 1997 following the EPA's decision to deny Shintech air quality permits. Despite dozens of previous petitions from communities around the country, this was "the first time the [Environmental Protection] Agency has granted a citizens' petition for review under Title V of the Clean Air Act." The EPA thus temporarily overruled the state agency[126] by agreeing to consider the charges that Shintech's choice of the largely African American Convent site amounted to environmental racism. Thus the EPA established a precedent for arguing environmental racism as a reason for denying an industry the right to expand. The EPA had previously made clear that environmental justice complaints were to be decided not on the basis of intent to discriminate but on the impact of actions, irrespective of intent. These EPA decisions had flown in the face of a number of Supreme Court decisions from

the previous ten years that placed the burden of proof on plaintiffs to show the intention of employers, industries, and others to discriminate.[127]

Industry representatives understood the radical implications of the EPA's action. Shortly after this decision, the *Oil & Gas Journal* stated the industry position quite clearly, complaining in an editorial that "the notion of environmental justice has escaped its jar in the Clinton Administration and flitted into the real world of people and money." It warned that "before an outright infestation develops, someone should find an effective pesticide."[128] Another chemical trade publication argued that the "EPA's approach to weighing environmental justice petitions" amounted to an intrusion on state's rights.[129] Robert Bullard, perhaps the nation's leading scholar of environmental justice, saw the EPA's consideration of the Shintech case as a *Brown vs. Board of Education* for environmentalists.[130] Just as that 1954 Supreme Court decision had laid the ground for desegregation, so this decision by the Carol Browner's EPA made it reasonable for poor, minority communities to expect that they could challenge industry over the issue of environmental racism.

Galvanized by the EPA's decision, the residents of Convent mounted an astounding national campaign to demonstrate to Washington that the country was watching. In addition the campaign further energized the environmental movement. Civil rights leaders like Jesse Jackson and entertainers Bonnie Raitt, Dave Mathews, Michelle Shocked, and Wynton and Branford Marsalis (themselves natives of New Orleans) weighed in on behalf of the community.

As residents awaited the EPA's final ruling, they continued to challenge the state and the governor through public hearings and public protests. In Convent a parade of local, state, and federal officials attended public hearings to demonstrate to the EPA that they were sensitive to the potential impact a new Shintech plant would have on the community's well-being. Members of Congress, including Democratic Senators Paul Wellstone of Minnesota and Carol Mosely-Braun of Illinois and Democratic Representative John Conyers of Michigan, urged the EPA to decide in favor of the community.[131] In Baton Rouge, Greenpeace joined with LEAN to educate residents of the state and urged them to support the Convent struggle. They held demonstrations and unfurled banners from the Capitol.

The combination of protests, legal actions by Tulane's law clinic and community groups, ongoing negative publicity, and the threat of a precedent-making federal action finally caused Shintech in September 1998 to withdraw its plan to build the plant at the Convent site. As a result of Shintech's decision, federal EPA administrators were spared the responsibility

of making a potentially explosive decision, the state of Louisiana was spared the opprobrium of the press, and the chemical industry was spared having the EPA intervene to control the activities of one of their industries, which would have meant a significant shift of power from the corporations to the communities.

Convent and the Tulane Law Clinic had won, but it was largely a bittersweet victory. In the end, Shintech simply built a smaller plant across and up the river in Plaquemine, next to a Dow plant that could supply Shintech with materials. Shintech attempted to portray its new plant site as proof that it didn't practice environmental racism. Plaquemine, according to Shintech spokesperson Dick Mason, "has a smaller minority population, lower poverty levels and higher relative income levels than the St. James Parish area."[132] In the words of the *New York Times* headline, Shintech "Evades 'Environmental Racism' Test."[133] But Tulane legal clinic director Robert Kuehn pointed out that the demographic evidence Shintech was offering could "be traced to 1991 when Dow bought out and relocated the predominantly black community of Morrisonville."[134] In other words, the predominantly African American community in question had already been moved out by Dow.

Greenpeace quickly announced that "the battle against Shintech is now shifting to Plaquemine, Louisiana."[135] Within months of the announcement that Plaquemine would be the site of the new plant, residents formed a group called People Reaching Out to Eliminate Shintech's Toxins (PROTEST).[136] Dow had in 1997 released 3.7 percent more air pollutants than it had in 1996[137] and its Plaquemine plant had been the scene of several explosions and major leaks during the 1980s and 1990s. In October 1994 fires at the plant resulted in the release of seven thousand to eight thousand pounds of chlorine into the air, prompting the town to initiate the practice of what they call "Shelter in Place."[138]

This program, used throughout the Louisiana chemical corridor and Lake Charles, ostensibly protects community residents when chemicals are accidentally released from a plant. The program is simple and generally quite ineffective. When sirens from a plant ring and announcements on the radio warn that a release of toxic materials has occurred, residents are supposed to seek shelter indoors and turn off their ventilation systems, if they have them. In Plaquemine, for example, sirens awakened residents in more than four hundred homes at 3:40 AM on October 3, 1994. The Community Alert Network, a telephone alert system, and radio stations warned residents to remain indoors and to close their windows. The River Road, Louisiana 1, was closed for the rest of the day as drifting fumes and the

toxic smell of chlorine covered the area.[139] (For many of the poor, whose homes were often little more than shacks, Shelter in Place must have seemed a cruel joke, for their homes were rarely airtight.)

This time, unlike in Convent, the governor sought to head off trouble by meeting with Plaquemine residents.[140] Officials from Shintech also listened to residents' concerns in an effort to appear to be sympathetic and responsive.[141] Still, local protests continued, attracting to Plaquemine activists like Lois Gibbs, who had emerged as a national leader after organizing community residents to protest against Hooker Chemical's dumping of chemicals at Love Canal in Niagara Falls, New York.[142] But the protests at Plaquemine were much diminished by Shintech's success in convincing residents that the company would be a good corporate neighbor. In addition, permits to construct the plant were granted much more quickly than they had been at Convent. Construction began early in 2000.

The case of Shintech raises the question of how a poor, politically powerless African American community managed to triumph over a giant chemical company during an era when appeals to justice had often fallen on deaf ears. In the 1960s civil rights groups and even the federal government were quick to act when blatant racial discrimination was demonstrated. But more recently, citizens who charge discrimination by state governments and industries receive little help from a federal government whose policy is decidedly pro-corporate—encouraging oil exploration, opening up federal lands for mining and logging, and relaxing federal air pollution standards. Yet there is resistance, and the linking of health issues with traditional environmental and labor concerns may be a potent force in stimulating a new, grass-roots opposition to corporate power. What seems to account for the success in Convent, Louisiana, was that the protests of residents were heard and joined by traditional and activist environmental groups, labor activists, lawyers, and some in the federal bureaucracy committed to social justice. This committed coalition exerted its collective power and defeated an incredibly powerful corporation.

10

Science and Prudent Public Policy

Environmentalists who might disagree on many issues have been united in their common distrust of chemicals, factories, and new technologies that they believe are radically altering the ecological balance that is the basis for life on this planet. Although such issues rose to new prominence with the debate over global warming, as early as the 1960s and 1970s some of the nation's leading scientists saw in the new chemicals the potential for ecological catastrophe if they were not controlled.[1] These researchers outlined the many ways chemical pollution was wreaking havoc on our environment: fish were being killed off in the Great Lakes and the Hudson River; birds and other animal life were being destroyed; asthma rates were soaring as a result of pollution and urban smog; and cancer and other diseases were proliferating. While these researchers called for a concerted effort to develop better data on the relationship between industrial pollution and disease, they also argued that, in the absence of final proof, the government must step in to protect a fragile environment from a host of man-made insults. In essence, these scientists were calling for a different approach to evaluating environmental danger. As the signers of the Wingspread Statement on the Precautionary Principle put it in January 1998, the principle of precaution should be the overriding policy in environmental matters. Rather than await definitive proof that may never come, society must require a certain degree of confidence in a material's safety before allowing it into the human environment.

Others maintained that there must be convincing scientific proof of danger before policy makers had the right to intrude on the private reserve of industry in America. Conservative intellectuals, in particular, challenged environmentalists' assumptions that there was a causal connection between chemical exposures and the rising epidemic of cancers. For example, Edith

Efron, whose research was funded by the Olin and Pepsico foundations, wrote in her 1984 book, *The Apocalyptics: Cancer and the Big Lie,* that elite scientists had perpetuated a tremendous hoax by claiming that cancer was a product of industrial production. She claimed that science itself had demonstrated exactly the opposite, that there was little or no scientific proof of a link between cancer and exposure to a variety of chemicals. Ideologically driven radical scientists from elite universities had intimidated other scientists, she wrote, and kept them from proclaiming this truth. Conservative intellectuals even argued that there was no reason for government to act because technological innovation combined with a resilient earth would easily absorb any man-made insult.[2]

Another author, Elizabeth Whelan, the president of the American Council on Science and Health, an organization founded in 1978, made virtually the same argument in *Toxic Terror,* published in 1985 and again in 1993. Whelan found "an astounding gap between the consensus in the scientific and medical community on environmental issues versus what was being presented in popular publications, on television and radio and in books" for the layman. She argued that the "extreme environmentalist movement" had needlessly terrorized the public into believing that chemicals were unduly hazardous and called for "Americans to recognize the severity of the gap between science and popular public thought, and the dramatically unpleasant side effects that a continued embracing of environmental alarmism will have for our country." Why, she asked, "are the media so gullible when it comes to swallowing whole the utterances of the doomsayers?" and "why haven't the vast majority of American scientists and physicians come forward publicly in defense of the truth?"[3]

The American Council on Science and Health (ACSH), distinguishing itself from "so-called consumer-advocacy organizations that misrepresent science and distort health priorities," claims to represent "mainstream science, defending the achievements and benefits of responsible technology within America's free-enterprise system."[4] Many understood the organization, which receives financial support from major chemical industries and conservative foundations, to be a front for industry.[5] In "The ACSH: Forefront of Science, or Just a Front?" *Consumer Reports* noted in 1994 that the ACSH received "40 percent of its money from industry, particularly manufacturers in the food processing, beverage, chemical, and pharmaceutical industries, and much of the remainder from industry-sponsored foundations." Major contributors included American Cyanamid, Dow, Exxon, Union Carbide, Monsanto, and Uniroyal Chemical Company, the very companies that had fought against the vinyl chloride standard.

Consumer Reports argued that "sometimes, the council appears more interested in fighting regulation than in promoting good science or health."[6] As Sheldon Rampton and John Stauber noted, with the exception of its opposition to the tobacco industry, the ACSH has denied the relationship between asbestos, Agent Orange, DDT, lead, and chemical food additives and environmental disease.[7]

Some argue that the government should not concentrate on the elusive, ambiguous relationship between chronic illness and long-term exposures to environmental pollution, but should devote its attention and resources to widely accepted links between disease and tobacco, alcohol, poor diet and personal behavior, not industrial activities or policies. They also maintain that it is facile to minimize the question of economic development. In his 1998 book *The Promise and Peril of Environmental Justice,* Christopher Foreman faults environmental activists for failing "to confront the inevitable tradeoffs between economic opportunity and environmental risks." In Foreman's view, "these risks are, in the grand scheme of things, mostly relatively low and manageable." In the case of Convent, Louisiana, Foreman's view is that many of the residents "anxiously awaited construction of a proposed plastics plants, only to see the EPA delay approval as a result of lobbying by an activist coalition that was probably unrepresentative of community sentiment." The most important issue should be economic development, which, if halted by calls for environmental justice, will only "produce its own victimization of minorities."[8]

Citing studies that call into question the validity of the fear of cancer among residents of these river communities, journalist Henry Payne writes that "the idea that a PVC plant is somehow less healthy than other factories illustrates radical environmentalists' exploitation of the regulatory process to oppose industrial development" rather than a statement of scientific validity.[9] Along with conservative and business groups, Payne argues that "people with below average incomes generally live closest to pollution sources"[10] because they chose to take advantage of low rents.

Stephen B. Huebner, the Jeanne and Arthur Ansel Fellow in Environmental Policy at the Center for the Study of American Business at Washington University, for example, tried to explain the close connection between factory sitings, hazardous waste dumps, and poor people's communities by arguing that the poor themselves were at work in creating this concordance: "Economic forces play a role in shaping the racial and economic characteristics of neighborhoods surrounding undesirable facilities. When an industrial facility is sited, property values in the surrounding areas may fall. Over time, relatively wealthy residents may leave the neighborhood,

while the relatively poor, for whom it is more costly to leave, may remain. In addition, the increased affordability in housing may create an inflow of new, less affluent residents." Huebner believed that "economic disparities induce minorities to 'move to the nuisance.'" For Huebner, the problem was not that industries choose predominantly poor and black communities to place toxic waste dumps and polluting industries but that the poor themselves make a rational economic decision to seek out these communities because they want to benefit from the low property values there (and, presumably, the unhealthy quality of life).[11] If the federal government intervened and prevented industrial polluters from siting in poor communities, "that outcome could be detrimental to communities seeking the economic benefits [low property values, jobs, and low cost of living] associated with hosting industrial activity, and would hardly be 'just' for the affected residents."[12]

The business community stated the issue even more brazenly, arguing that "poverty makes its sufferers share with cost-conscious industrial developers an affinity for cheap real estate. To elitists, that economic verity comes across as cruel injustice; most poor people probably call it the chance to have work and a place to live."[13]

Not all conservative arguments are as crass as these. Aaron Wildavsky, Julian Morris, and others have argued that there is a danger in being too cautious. While certain technologies that have "serious negative effects and few beneficial effects (the plague and nuclear war are examples), imposing a general prohibition on the use of new technologies until solutions have been found to all their potential harmful side-effects is a recipe for stasis."[14] For many of these authors the recent concerns of environmentalists about the potential impact of new chemicals and new technologies on the environment are exaggerated and have the potential for undermining American industry's long-standing commitment to innovation and progress.

DIFFICULT TO QUANTIFY, EASY TO SMELL

Environmentalists base their arguments on the belief that people's health is more important than the uncertain and uneven impact of economic development. The problem for environmentalists has been that although certain chemicals are toxic, it has often been difficult to show to the satisfaction of government regulators a direct correlation between particular chemicals from smokestacks and sewer pipes and the specific illnesses in clusters of people in particular communities. In situations where low-level

exposures are suspected of causing harm among small populations, the small sample size makes it impossible to demonstrate statistical significance. Furthermore, without appropriate controls, specific characteristics such as age, socioeconomic condition, or other personal or community factors can lead to false conclusions if they cannot be measured or are not controlled for. While the suspicions may or may not be correct, any conclusion regarding cause and effect is open to serious criticism.

Common sense and observation leave the public convinced of the link between chemicals and their watering eyes, burning skin, and labored breathing. Francis Adeola, of the University of New Orleans, states, "Unequivocally, a disproportionate exposure of the people of color to hazardous wastes and environmental illnesses in the state of Louisiana constitutes a serious environmental injustice." However, he laments, "the available statistics [data gathered] on the causes of death do not provide enough breakdown to allow a systematic examination of deaths due to toxic wastes and other environmental hazards."[15] In the end the inability of epidemiology, toxicology, and statistics to demonstrate very small effects have been used by conservative critics who fashion the lack of statistical significance into the argument that such effects do not exist.

In her book *Uncertain Hazards,* Sylvia Tesh explains that the central shortcoming of epidemiological studies is their need to focus on an identifiable and measurable entity; for example, researchers can look at cancer incidence but cannot accurately look at the variety of outcomes, such as neurological disorders or reproductive problems, suffered by many of the populations at risk. In the absence of extraordinarily sophisticated and extremely expensive longitudinal studies, there is little chance that any but the most unambiguous and obvious problems will be uncovered.[16] As one physician who studies disease in industrial settings puts it, "I'm usually the last to know when there's an environmental problem. Even then I can only find anything of significance when virtually everyone in a community or a factory already knows the problem exists."[17]

Environmental epidemiologists who work outside the laboratory attempt to study a complex world in which contamination and exposure to toxins can come from a variety of sources, including air, water, or land. Because of the many dynamic relationships between populations and their environments, it is virtually impossible to control the huge number of factors that can account for different lengths (and intensities) of exposure, specific chemicals or chemical mixes, or routes of exposure. "Normal science worries more about false positive errors," explains Peter Van Doren, a political scientist at the University of North Carolina, and this bias "has

the inevitable side effect of increasing" the risk of missing real disease. By requiring a 95 percent confidence level of statistical probability of the proof of danger, an inordinate number of studies inaccurately report no danger when in fact danger does exist. "False negatives," he argues, are a real problem for community studies because the conservative nature of statistical analysis decrees such a high threshold of proof that much meaningful evidence is often rejected in favor of the "null hypothesis" of no causal relationship.[18] Traditionally, statisticians would "rather falsely claim no association between variables when there is one than claim an association where it does not exist."[19]

Tesh gives the example of a small city of 100,000 people and the risk of cancer. Since cancer is a fairly common disease and accounts for 20 percent of all deaths nationwide, one might expect that of the average of 872 deaths in the community annually, 175 would be from cancer. If a certain plant spewed an airborne carcinogen that caused 10 extra deaths from cancer, these people would not cause a statistically significant rise in the mortality rate of the city as a whole because "10 extra cancer deaths in that city could not be distinguished from the expected variation. And it would not be statistically significant at the 95 percent confidence level."[20] Tesh's analysis confirms the astuteness of the reaction of the pharmacist in St. Gabriel, Louisiana, Kay Gaudet: "Risk assessment will probably fail to support the claim by members of grass roots environmental groups that their health is endangered by exposure to pollution."[21]

In large measure, conservative analysts have used epidemiological studies to raise doubts about environmentalists' and community residents' fear of industrial pollution. In part, this is because of a difference in the understanding of what constitutes proof of danger. In essence, the conservative arguments rely on a view of science, and of epidemiology in particular, that is overwhelmingly reductionist. It sees the world in mechanistic terms that cannot account for the complexity of interactions and social relationships that determine outcomes in complex systems.[22] But mainstream epidemiology increasingly rejects this reductionist assumption. Scientists such as Kenneth Rothman, Mervyn Susser, Ezra Susser, David Ozonoff, Steve Wing, and Samuel Shapiro are much more sophisticated in their analysis of the role of epidemiology in the uncovering of environmental diseases. They point to the fact that no single study (epidemiological or in any other discipline) is definitive and that no discipline alone can complete the process of proving causality. Rather, it is the accumulation of evidence and the direction of that evidence that shows causality. Even tobacco's relationship to lung cancer was not "proven" by a single study,

epidemiological or otherwise. Rather, it was the accretion of epidemiological evidence that leaves few, if anyone, in doubt of the reality of this causal link.

In Louisiana, the inability of Vivien Chen's studies to find harm, even when everyone—professionals and lay people alike—knew there was a problem, undermined public faith in her methodology. Jim Gentry had worked as an environmental lab technician at Dow Chemical in Plaquemine for nineteen years and had sat on the state panel that reviewed the epidemiological design of the miscarriage study conducted in St. Gabriel. He became frustrated by the discrepancy between the results of specific studies, which showed at best a weak association between chemicals and miscarriage, and the seemingly legitimate conclusion drawn from simple observation that there was a link. He asked if the fact that the state study could not statistically demonstrate harm meant that danger did not exist: "When you walk out of the house and the smell almost knocks you down, when your neighbors call and ask you to step outside and see if you can figure out what's in the air, when birds die in the backyard, when you get headaches from the fumes, how do you tell people that there's nothing wrong?"[23]

Much of the pressure on the EPA comes from the fact that the number of Title VI Civil Rights complaints have grown and the EPA knows its tools for establishing harm to minority residents are problematic. It is necessary for the EPA to find "tools that could be used repeatedly with some ease" when communities make claims of environmental racism.[24] When the Office of Civil Rights (OCR) of the EPA receives a complaint based on issues of environmental justice, it has to "determine whether the complaint states a valid claim." If, after review the office accepts the complaint, it investigates to determine "whether the permit at issue will create a disparate impact, or add to the existing disparate impact on a racial or ethnic population."[25] If the EPA finds that the permit creates a disparate impact the state agency that issues the original permit has "the opportunity to rebut the findings, to propose a plan for mitigating a disparate impact, or to justify the impact." If no voluntary solution is found, the OCR can "start procedures to deny, suspend, or terminate funding of the agency."[26]

The problem with this procedure is that the Office of Civil Rights needs "a method of measuring or estimating the difference in the impact [of polluting facilities on] population subgroups."[27] The OCR needs to know if there are substantial differences in the impact of pollution on different groups and whether these differences can be considered harmful to specific populations. Since the determination of such a differential impact greatly

affects policy decisions, it has to be based on sound methodology and science that can be subjected to peer review. The case of Convent, Louisiana, is illustrative: the EPA's Scientific Advisory Board set out to evaluate the available methodologies for assessing risk. The first stage used by the EPA in the Shintech case, the Relative Burden Analyses, sought to analyze the average burden per person of toxic emissions released from the smokestacks of factories located in their midst, using the Toxic Release Inventory data gathered during the previous decade. The second methodology, Cumulative Outdoor Toxics Concentration and Exposure Methodology (COATCEM), follows the dispersion of specific toxins and carcinogens from their source to the communities affected and estimates "cumulative cancer risks and non-cancer health effects of the chemicals."[28]

But there are major problems with both methodologies. While the first was seen as "simple, transparent, easy to use and understand," it had fundamental weaknesses that "significantly limit[ed] its utility." The most significant weakness was that all data were collapsed into one pseudo-chemical; no distinction was made between the various chemicals released into the air by a plant in an area. The Science Advisory Board determined that, although the second methodology, COATCEM, had "potential for future use" because it differentiated between chemicals and their relative toxicity, it too had significant weaknesses. It was more expensive and required a greater degree of scientific expertise, making it difficult for community groups and the EPA to use it. While both methodologies were developed to evaluate the threat of air pollution, neither could evaluate the threat to human health posed by polluted drinking water, soil, underground injection sites, or spills. Nor could these methodologies identify the effect of acute, short-term exposures whose health effects could be "significantly higher than the calculated steady state levels." And neither could take into account that "some emitted chemicals are stable while others are reactive" or that some chemicals are released as vapors and some as particles.

Of special concern to the EPA's Science Advisory Board was the fact that both methodologies depended upon the TRI data given to the government by specific companies. "These data are useful but have certain limitations, since they are self-reported by facilities and are often based upon estimates rather than upon monitored emissions." Not all facilities are required to report TRI data to the government nor are all chemicals "emitted from a facility required to be reported." Because even these incomplete and uncorroborated data are averaged over the course of a year, and because toxic releases occur periodically, using annual data could significantly misrepresent exposure levels.[29] In recognition of the weaknesses in the methodologies, the committee made certain recommendations to improve the methodologies—changes in data gathering, reporting, and specificity. But overall the committee was not particularly hopeful about the possibilities for better accuracy.[30]

But new studies of workers exposed to very low levels of vinyl chloride monomer (VCM) provide hope that other branches of science may have something to add to the environmental debates. Dr. Paul Brandt-Rauf of Columbia University and his colleagues reported in 2001 that workers exposed to levels of VCM below the current permissible exposure limits develop "specific mutations in the *ras* oncogene and the p53 tumor suppressor gene." While the impact of this subtle biological change may appear obscure to us today, the authors suggest that biomarkers may prove extremely useful "for monitoring human exposures to occupational and environmental carcinogens." The use of such biomarkers may mean that we may not have to wait for epidemiological proof of the effects of chemicals in terms of human disease, but rather "biomarkers can provide intermediary evidence for potential hazardous (or protective) exposure levels that can enhance risk assessment for occupational and environmental exposures and better inform regulatory decisions."[31] Today our body burden of potentially dangerous endocrine disrupters is haunting a new generation of scientists worried about a host of new subtle mutagenic and teratogenic effects on generations yet unborn.[32]

The issue of evaluating environmental causes of disease becomes even more complex when we ponder the implications of a 2001 Centers for Disease Control (CDC) report that indicates that a host of synthetic materials are now constituents of our bodies whether we live in a polluted region or not. As Clair Patterson demonstrated in the case of lead nearly forty years ago, now the entire earth is covered with synthetic materials that have insinuated themselves into everyone's bodies. While lead was one of few pollutants present in our bodies a half century ago, now phthalates, pesticides, organochlorines, and heavy metals are present as well. The CDC study is expanding and will undoubedly document more and more synthetics in our body tissue. The implications of the presence of these chemicals in our bodies are virtually impossible to fathom, and they make studies looking for health effects even more problematic.

Theo Coburn's *Our Stolen Future* and Joe Thornton's *Pandora's Poison: Chlorine, Health, and a New Environmental Strategy* raise important questions about where we are heading and what we can do to avoid unknown and inestimable problems. They maintain that older paradigms of danger

from industrial products centered on the immediate impact and/or the cancer-producing potential of toxins. The synthetic compounds in use today, especially the chlorinated hydrocarbons (of which vinyl is one of the most prevalent) pose a new kind of danger. Although cancer is still of concern, these synthetic chemicals may be causing new classes of disease and damage to the body that are too subtle to even measure. Specific concerns have been raised about the possibility of endocrine disruptions and genetic mutations—leading to neurological and physiological changes that will affect generations to come. Thornton, a research fellow at Columbia University's Center for Environmental Research and Conservation, argues that the organochlorines, like polychlorinated biphenyls (PCBs), can "reduce sperm counts, disrupt female reproductive cycles, cause endometriosis, induce spontaneous abortion, alter sexual behavior, cause birth defects, impair the development and function of the brain, reduce cognitive ability, interfere with the controlled development and growth of body tissues, cause cancer, and compromise immunity."[33]

If this is true, and certainly Thornton makes a powerful argument to support his contention, then the complexity of the problem that scientists and policy makers face is greater than ever. The only prudent course is to adopt a strategy used for pharmaceutical regulation for decades: test materials for safety before they are widely distributed through the environment and avoid mass exposures that may create problems taking decades of suffering to correct. This is certainly the lesson of lead's history. In 1991 the National Research Council's Committee on Environmental Epidemiology acknowledged the dilemma of environmental epidemiology, especially with regard to environmental exposures and the public's health. They found that "insufficient data [were] available for evaluating the impact on public health of exposure to [toxic] substances."[34] The commission opted for caution: "Although the effect on large populations of very low levels of toxic pollutants is unknown, action must be taken now to protect public health in the future."[35]

Such caution is even more important in light of the unfulfilled mission of regulatory agencies such as the EPA to evaluate what can and should be known about the dangers of chemicals in the environment. If the problem were simply that it is impossible to find out the dangers associated with various chemicals, a case might be made for privileging "progress" over precaution. But the EPA is so underfinanced and understaffed that even the most basic evaluations of most new chemicals are not done. According to the EPA, in 1998 only 43 percent of 2,800 chemicals produced in volumes

of one million pounds a year or more had basic toxicity data and only 7 percent had a complete set of basic screening level toxicity data.[36]

In March 2001, the CDC's National Center for Environmental Health, under the direction of Richard Jackson, released a study indicating that there has been a remarkable decline in levels of lead in people's blood over the last two decades, since the phasing out of leaded gasoline and the elimination of lead in household paints. The case of lead is an indication of the importance of the precautionary principle in practice. The lead industry assured workers and consumers for decades that lead was safe and was essential to the success of modern industrial America. Yet, Americans have managed to live with dramatic decreases in the use of lead in a variety of products and have seen the benefits of its elimination. Similarly, the chemical industry worked hard to convince people that plastics equaled prosperity and that plastics were safe. It has become clear that lead and plastics have their place in modern culture, but many people argue that the materials do not deserve a special privilege as untouchable and unregulated substances. Several European countries have taken the position that polluting industries should be subject to special taxes, a financial burden that could trigger technological innovation and possibly allow societies to lower taxes in other areas.[37]

Until the late 1990s the critiques of environmentalism focused mostly on local or national disputes. But recently the arguments have taken on international dimensions, especially during and after the debates over the Kyoto Protocol on Global Warming. The international discussions have significantly raised the stakes in what was once a relatively limited debate about how to respond to particular crises like Love Canal or Convent, Louisiana, or specific threats like lead and vinyl. Issues that were once of concern to particular companies and communities are now of concern to multinational corporations and the world.

The Business Roundtable, founded in 1972 as an association representing two hundred of the nation's largest corporations to counter the government's growing regulatory role, has taken an active role in debates concerning environmental pollution. In recent years, the Roundtable has actively opposed the Kyoto Protocol. Its members argue that to delay implementation for developing countries would put the United States at special disadvantage economically, that voluntary efforts to stem the release of greenhouse gases should prevail over mandatory requirements, that the development of new technologies rather than conservation and energy

efficiency should be the focus of U.S. efforts. This influential body has argued that there is no imminent crisis and that the long-term nature of global environmental change gives us the opportunity to study the science of global change more closely to be able to arrive at conclusive judgments. "Because climate change is a complex issue which will evolve over many decades," the Business Roundtable asserted in 1996, "no policy commitments should be made until the environmental benefits and economic consequences of global climate change proposals are thoroughly analyzed and reviewed."[38]

Does this mean that policy making should remain paralyzed as we seek to develop more and more information? Or, in George W. Bush's words regarding global warming, do "we need more studies"? Perhaps we need a different approach, one that takes science's uncertainty not as a sign that there is no danger but as a sign that serious danger might well exist. If this approach were taken, we would have a very good policy model, one that emphasizes restraint and caution, rather than unchecked technological advancement, as the principle by which policy should be developed. Such an approach might become ever more important as we contemplate the newer health issues that the chlorine industry presents to us. Perhaps we should consider the admonition of the National Research Council in 1991: "Until better evidence is developed prudent public policy demands that a margin of safety be provided regarding potential health risks. . . . We do no less in designing bridges and buildings. We do no less in establishing criteria for scientific credibility. We must surely do no less when the health and quality of life of Americans are at stake."[39]

Conclusion

Over the course of the twentieth century the tension over industry's responsibility for ensuring the safety of workers and the general population has only increased. When Mrs. Emmers wrote to President Roosevelt in 1933 asking for help with her child who was disabled from lead poisoning, she did so with little hope that either industry or the government would respond. In fact, she was informed that the government could do nothing except recommend her to charity.

How different things look today. For one thing, a Mrs. Emmers would not be alone. She would talk to her neighbors, and if they noted a pattern in the health problems of their children they might very well organize themselves to take action. Her husband's union would most likely be attentive to the occurrence of medical problems and would either raise the issue with management or go directly to the Occupational Safety and Health Administration (OSHA) for redress. Mrs. Emmers or the union might enlist help from a local Committee on Occupational Safety and Health (COSH) or from environmental groups, which might in turn lobby for regulations to control the industry responsible for harming her husband and daughter.

A modern-day Mrs. Emmers would probably not be so polite, nor would she assume that industry was on her side. Like Mrs. West, Mrs. Melancon, and Mrs. Roberts of Convent, Louisiana, she would know from the history of the last century that industry could not be trusted with her family's health and safety. She would have read or heard news about the activities of the asbestos and tobacco industries and the Ford and Firestone companies, which, in pursuing their own financial interests were negligent about the health and safety of workers and consumers. Knowing about Love Canal, Three Mile Island, and Bhopal, she and her neighbors who were

poor and (more likely than not) African American or Hispanic would be suspicious of any large industry moving next door and wonder why the company had chosen their community. As a citizen and voter, she would be familiar with terms like "global warming," "environmental impact" and "toxic wastes" and would be aware of protests by environmental groups worried about industry's effect on the environment or even the globe.

The history of the lead and vinyl industries gives us a window into why the relationship between industry and the public is so strained today. These industries responded to potent evidence of the danger of their products by hiding information, controlling research, continuing to market their products as safe when they were known to be dangerous, enlisting industrywide groups to participate in denying that there was a problem, and attempting to influence the political process in order to avoid regulation. There are those who find the actions of the lead and vinyl industries so egregious as to constitute a subversion of democracy. They believe that by promoting secrecy, interfering with scientific research and thereby inhibiting the free exchange of ideas, by buying the loyalty of elected officials with donations to political action committees and with soft money contributions, by threatening economic abandonment and unemployment if communities insist upon safety and health regulations, these industries posed a serious threat to political democracy in the United States.

The question is this: How representative are lead and vinyl of general corporate behavior? Some would argue these are rogue industries, atypical of the general business culture. But this itself would be an article of faith, not fact, since neither the public nor the academic community has the opportunity to review the internal histories of most other American corporations. At the present time industries are not required to make internal corporate or trade association documents available to the public. These documents, which help the public understand what information industry possessed on particular toxins and what actions industry took in regard to those toxins, generally enter the public record by way of lawsuits. In the case of lead, lawsuits by lead-poisoned children, states, and municipalities against the lead industry have made such documents available. In the case of vinyl, lawsuits by poisoned workers against some of the largest chemical and petrochemical companies in the world have led to the discovery of documents that show lying, manipulation of government officials, and secrecy as tools used by industry to protect its product. What emerges is a history of deceit that is strikingly similar to that of the asbestos and tobacco industries. As with asbestos and tobacco, the lead and vinyl industries knew of dangers from their products but chose to ignore or conceal

them. In fact, they actively deceived the public about the safety of their products. While we may not yet know the actions of all industries with regard to industrial toxins, by now we do know that at least four or more major industries engaged in very similar activities to keep information from the public and to prevent regulation of products that they knew to be dangerous.

Society is now holding corporations to new standards of ethical behavior. The National Consumers League first began putting its consumer safety label on products and *Good Housekeeping* magazine began using its "Seal of Approval" back in the Progressive era. The dramatic expansion of a consumer economy and the simultaneous creation of consumer groups brought to the fore the obligations of industries to the public. National legislation, as well as local ordinances, sought to protect consumers from adulterated food, impure drugs, and the like as early as 1906. In the 1910s and the 1920s, legislators argued over the need to protect consumers from industries that acted negligently or irresponsibly.

There is no question but that industry has had a moral and ethical obligation to protect consumers for at least a century. Similarly, industry has had an obligation to its workforce. The massive industrialization that transformed the cities of the nation created a heightened awareness of the dangers of the new society that was increasingly seen as threatening and dangerous. By the early decades of the century, industry itself acknowledged this transformation by organizing its own National Safety Council, whose "Safety First" motto became synonymous with good corporate citizenship by the 1920s. Warnings about danger in the industrial setting and the reorganization of work and the introduction of safety equipment all spoke to this radical reorientation that shifted responsibility for accidents from the worker to the employer. Simultaneously, state after state passed workers' compensation statutes that also acknowledged the obligations of industries to protect their workforce. In this light, no one today can argue that the actions of the tobacco industry and the asbestos manufacturers decades ago in hiding dangers of their product from the public were moral.

Whatever the ethical history of industry may have been, the fact remains that the general public, given what they have learned of industrial disasters and harm to workers and populations resulting from industry inaction, feel suspicious of industry and more hesitant than ever to allow industry total responsibility for their health. All over the world the struggle between industry and the public over responsibility for the public's health is being played out. In Hudson, New York, a cement company's

proposal to build a plant on the Hudson River—where General Electric dumped PCBs a generation ago—has met serious opposition from the community, which is concerned about the health and environmental effects of such a plant. In the working-class neighborhood of Mossville in Lake Charles, Louisiana, African American residents have organized to challenge the assurances of the plastics and petrochemical companies that the chemicals used in their plants will cause no harm. In San Diego, California, and Tijuana, Mexico, Anglo and Hispanic environmental activists have joined forces across the border to stop the dumping of toxic materials in Mexico.

As we have seen in the history of lead and vinyl, residents who were worried about harm from industrial toxins generally began by taking their grievances to the company. When they felt that an industry was neither providing them with sufficient information nor addressing the conditions that were harming workers and community residents, they often began to push for regulation of the industry. It was at this point, sensing the possibility of government regulation, that the industry generally got behind voluntary compliance as the best way to "regulate" industry.

The first government responses to grievances in regard to industrial pollution occurred on the local and state levels. In these instances the government acted less like a policeman and more like a partner interested in working cooperatively with industry through organizations like the National Safety Council and the American Conference of Governmental Industrial Hygienists. But as it became clear that state, local, and voluntary efforts were inadequate to cope with the massive environmental and occupational health problems that emerged after World War II and as the movement for government regulation heated up, federal agencies like the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the Environmental Protection Agency (EPA), and the Consumer Product Safety Commission (CPSC) were established. These agencies were significant not only for what they actually did to protect the public and the workforce, but even more for the fact that they lent legitimacy to the work of researchers outside industry, establishing the principle that industry must not be solely responsible for sponsoring the research and considering the data. They provided a generation of students in medical and public health schools with employment outside industry, and they began investigating issues once considered the preserve of the laboratories of the chemical, auto, and lead industries.

In the mid-1970s, confronted by increased regulation and greater opposition from activist communities, industry formulated new strategies to

regain the upper hand and to prevent further regulation of its activities. Through trade associations, political lobbying, and contributions to political action committees, industry sought to influence legislators and rein in federal agency administrators. The most powerful CEOs established industrywide organizations like the Business Roundtable, while smaller businesses relocated their trade associations to Washington to represent industry's position at the highest levels of government. At the same time, they contributed large sums of money to defeat the political candidates who were most dangerous to them. As a result, the business community from the late 1970s through the 1990s was very successful in neutralizing the demands of the national organizations of consumers, environmentalists, and labor that had proven so troublesome in the 1960s and 1970s.

Such actions by the business community convinced many people that regulation is susceptible to pressure from politicians. No longer was the task of activists to push for legislation; the issue became one of who controls the legislators. There is no more telling example of industry's power to affect the legislative process than the election of George W. Bush. Immediately upon taking office in 2001, Bush, known to be a friend to industry, appointed Gale Norton to head the Department of the Interior. Norton, a former lobbyist for NL Industries, the modern incarnation of National Lead, was quick to claim that the lead industry had first learned of the dangers of its product to children in the 1940s and had acted immediately to remove lead from paint, when in fact industry documents indicate that they had known more than twenty years earlier that their product was killing children. Bush quickly reversed President Bill Clinton's adoption of the OSHA ergonomic standard, suspended the reduction of the arsenic standard for drinking water, and promoted oil exploration in a part of Alaska's protected wilderness. Bush also announced that the United States would not sign the Kyoto Protocol on Global Warming, claiming that "more research" needed to be done. Even in the wake of the September 11 attacks, the Bush administration acted to restrict public access to information about polluting industries and restricted journalists' and historians' access to government documents previously available through the Freedom of Information Act.

Americans, who are generally not of one mind when it comes to the question of regulation, nevertheless express widespread support for protection of the environment, that is, people's health and the nation's ecology. But as recent events regarding Enron have shown, an American public interested in regulation may be governed by an administration very much in alliance with industry and therefore not interested in regulation.

For this reason many people are concluding that they cannot count on government for protection and are turning to the courts as the arena through which to seek redress of their grievances.

National policy is increasingly worked out through liability suits, class action suits, and civil actions brought by individuals, groups of injured persons, and state attorneys general. In addition, the enormous victories of the asbestos plaintiffs in the 1980s suits against Johns Manville and the joint action brought by state attorneys general against the tobacco industry began to shift the balance of power. In the past, plaintiffs in liability lawsuits were at a distinct disadvantage in civil court because they had so little money compared to the huge corporations, which hired giant law firms, engaged an army of expert witnesses, and invested in legal and other research. Since the victories of plaintiffs in the asbestos litigation and the recent tobacco settlements, plaintiffs' law firms are, for the first time in history, as big as, and in many cases even bigger than, industry defense firms and can therefore devote the resources to do the research, and to mobilize the army of lawyers and experts necessary to prepare cases adequately. Recently, cities like New York, Chicago, Milwaukee, St. Louis, and San Francisco have engaged major firms to sue the lead industry for the injury to individual clients, while states have sued to recover the costs of special education programs, hospital costs, costs for detoxifying children's housing, and the like. The state of Rhode Island recently won a major victory when a judge ruled that a conspiracy case it had brought against the lead industry could go forward.

The issues that emerged in the lead and vinyl story continue to be important as we debate the future of the nation and of the planet. How should we deal with the industries' secrecy about the harmful effects of their products? Will legislation that requires industries to reveal their products' danger be sufficient to protect consumers? Like drug manufacturers, should industries regularly warn us of their products' potential harm? Should industries be allowed to simply export their poisonous manufacturing processes to less developed countries with few environmental regulations?

The international, even global, aspects of pollution have forced a reevaluation of the methods that Americans have used to control pollution. In the past, the "exportation" of polluting production plants to Mexico, Thailand, and other countries was largely overlooked by a complacent population enjoying low-cost clothing made from synthetic fibers manufactured overseas. Similarly, exporting dangerous materials banned at home, like DDT and tetraethyl lead, to other countries has outgrown its former

status as an ethical dilemma. With today's new awareness of the global impact of pollutants, whether in the United States or in Southeast Asia, exporting pollution has begun to transcend job loss or morality. The stakes have been raised, both for society and individual corporations. At the turn of the twenty-first century, Italian magistrates have brought criminal charges against twenty-seven managers of Italian chemical companies for ignoring and hiding information that led to the deaths of vinyl chloride workers and the discharge of dangerous toxins that led to pollution of the Venice lagoon and possible endangerment of the health of surrounding communities.

What can we learn from this history? Perhaps most importantly, we can recognize that it is absolutely essential to have as much openness and free access to information as possible. Without such information Americans are dependent upon the limited and sometimes inaccurate information given to them by companies. And it is ever foolish to forget that industry's first obligation is to its shareholders, and that all too often industry values secrecy over openness if only out of jealous protection of its competitive position. But when it comes to public health, the society has a right to insist that the community's interests come before the shareholders' profits. It is not enough for industry to tout the benefits of its products; it must also inform people of their potential dangers.

This is not a radical proposal. This is already common practice in the advertisements of pharmaceuticals and many household cleansers. But the requirement that companies include warning labels or inserts on products that contain dangerous materials is not sufficient. Far too little money is spent by industry, itself or by independent scientists, to evaluate the seventy thousand chemicals that are currently in wide commercial use. Further, we must remember the warnings of Drs. Linda Rosenstock (former head of NIOSH) and Marcia Angell (editor of the *New England Journal of Medicine*), who bring our attention to the insidious ways that industry affects the institutions that are meant to independently evaluate the toxicity of new products.

The issues of global warming and the subtle impact of numerous chemicals on our bodies force us to confront the limitations of our traditional tools for evaluating danger. Preventing endocrine disruption and subtle neurological change demands a level of precaution as sophisticated as that required to make sure that our milk is untainted, our meat uncontaminated with bacteria, and our grains not covered with deadly pesticides. As history has proven, science is often unable to give us the knowledge we need. Some have called for better science before judging a chemical

hazardous. But as Dr. Philip Landrigan has observed, what "often constitutes lovely science... frequently constitutes very poor public health because it delays for many years the enactment of good health protective regulations."[1]

We may never know the true extent of the damage lead, vinyl, and countless other chemicals have done to our society, not to mention the damage that trade associations have done to our democratic institutions. Nor will it ever be possible to evaluate the lost potential of individuals whose intelligence has been slightly lowered, whose behavior has become a bit more erratic, whose personalities have been altered in ways imperceptible to scientific measurement. We will never know the social, economic, and personal costs to society from the lost potential of our citizens.

NOTES

INTRODUCTION

1. Emmers is a pseudonym. See: A. W. M. to President Roosevelt (November 8, 1933), National Archives Record Group (NARG) 102, Records of the Children's Bureau, Central File, 1933–36, File: Diseases Due to Metallic, 4–5–17.

2. Marcia Angell, "Is Academic Medicine for Sale?" *New England Journal of Medicine* 342 (May 18, 2000), 1517.

3. Linda Rosenstock, "Global Threats to Science: Policy, Politics, and Special Interests," in A. Grieco, S. Iavicoli, and G. Berlinguer, eds., *Contributions to the History of Occupational and Environmental Prevention* (London: Elsevier Science, B.V., 1999), 113. See also Linda Rosenstock and Lore Jackson Lee, "Attack on Science: The Risks to Evidence-Based Policy," *American Journal of Public Health* 92 (January 2002), 14–18.

4. Ibid., 112.

5. Ibid., 111, 113.

6. "Talks Agree on Global Ban on 12 Very Toxic Chemicals," *New York Times* (December 11, 2000), Section A, 16.

CHAPTER 1. THE HOUSE OF THE BUTTERFLIES

1. David Rosner and Gerald Markowitz, "The Early Movement for Occupational Safety and Health, 1900–1917," in Judith Walzer Leavitt and Ronald Numbers, eds., *Sickness and Health in America: Readings in the History of Medicine and Public Health* (Madison: University of Wisconsin Press, 1985), 507–21.

2. Arthur B. Reeve, "The Death Roll of Industry," *Charities and the Commons* 17 (February 1907), 791.

3. Alice Hamilton, M.D., "Industrial Diseases, with Special Reference to the Trade in Which Women Are Employed," *Charities and the Commons* 20 (September 5, 1908), 655, 658.