

The Battlefield

This is the way the world ends

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Not with a bang but a whimper.

—T. S. Eliot, “The Hollow Men,” 1925

The campaign of Concerned Citizens of New Sarpy against Orion Refining ended with a show of hands in a crowded, windowless, cinder-block room on December 18, 2002.

The campaign had been one of those environmental David-and-Goliath stories about which movies are made. New Sarpy, Louisiana, a working-class town of seventeen hundred people, borders the Orion refinery. The back yards of the modest homes on one side of St. Charles Street end at the refinery’s fence; massive storage tanks squat just a few hundred feet away. With the refinery so close, residents were convinced that the toxic chemicals it released into the air were making them sick. So—as in *Erin Brockovich* or *A Civil Action*—the community took on the company, demanding that Orion buy their homes to make it possible for them to relocate to neighborhoods away from industrial pollution. In addition to the usual rallies, press releases, and lawsuits, New Sarpy residents had in their arsenal a novel weapon: the bucket. An inexpensive, homemade air-sampling device, the bucket produced measurements that proved that residents were breathing toxic

chemicals released by the refinery. The scientific data supplied by the buckets bolstered both residents' determination to move to a healthier environment and their confidence in their campaign. When in July 2002 Orion offered them money—their choice of home improvement grants or cash payments—to drop an important Clean Air Act lawsuit and continue to live next door, members of Concerned Citizens of New Sarpy (CCNS) angrily denounced the company for trying to buy them off. They vowed to continue their fight for clean air and relocation.

But there will be no movie made about New Sarpy. The bucket will not star as the stone that felled the giant Orion. On that December night in 2002, one week before Christmas, the loosely organized Concerned Citizens group voted to drop their lawsuit and accept a settlement that featured basically the same package of cash payments and home improvement money that Orion had offered—and CCNS had rejected—five months before. In simplest terms, Orion had won. Their money had trumped residents' evidence that they were breathing polluted air.¹

Or had it? Looking at the campaign in New Sarpy as a familiar story of David versus Goliath, of truth versus power, downplays an important plot twist. On the night of the settlement, leaders of CCNS declared that they had gotten what they wanted all along: clean air. They and Orion officials expressed their mutual appreciation for the respectful conversations through which the settlement had been reached. The corporate Goliath had seemingly become a trusted friend.

The night of December 18, then, marked not only an end to residents' attempts to discredit Orion experts and prove that refinery pollution was harming their health. That night marked the start of a new era of community-industry relations in New Sarpy. It was to be an era of respect, of dialogue, of corporate responsibility.

In the dawning of this new era, there is a movie-worthy story to be told after all—a story of struggle, of resourcefulness, of resilience. It is the story of the experts. It is the story of how petrochemical industry scientists and engineers, and the claims that they made about pollution and health, came under attack from all sides. From residents who disbelieved their reassurances that their plants did no harm. From environmental activists who charged that the industry was harmful on a grand scale. From academics who argued that the experts' truths are not the only, or the best, available. It is the story of how those scientists and engineers resisted those attacks. Of how they drew on important ideas and popular policies to forge a new relationship with residents who mistrusted them. Of how they themselves emerged from the battle changed.

Importantly, it was the newly respectful, cooperative form of community-industry relations—not shows of force—through which petrochemical industry experts regained their status as authorities over technical matters. Far from being a story of the fragility of truth in the face of power, New Sarpy's story is one of the robustness of experts' claims to speak for the truth through clever, fluid alliances with power.

Winning Respect

When the December meeting ended, Jason Carter,^{*2} a senior refinery official who had spoken about the settlement plan at the beginning of the meeting, looked pleased to hear of the vote's outcome, which he had awaited in the hallway. A white man³ in his midforties trained as an engineer, Carter had been frustrated throughout CCNS's campaign by residents' assertions that Orion's unchecked emissions were making them ill.⁴ For him, it was indisputable that New Sarpy residents' health complaints were not Orion's fault. Having come to the refinery less than a year after Orion assumed ownership in 1999, Carter conceded that the facility had had a reputation for poor environmental performance and lax safety procedures under its prior owner. He even admitted that, in the start-up process under Orion, the refinery had had a series of flaring incidents that had made it a nuisance to the community. But by the height of residents' campaign in mid-2002, Carter insisted, his refinery had no problems with its emissions. They had been unable to corroborate the results of residents' bucket monitoring, and, moreover, they were working out a settlement with regulators at the Louisiana Department of Environmental Quality to redress the earlier flaring problems and other issues that CCNS had raised in their lawsuit.

Given that the refinery's performance at the time offered no basis for CCNS's continued opposition, Carter attributed the campaign to factors that had nothing to do with science. In particular, he felt that the campaign continued because Orion somehow had not convinced residents that it was "committed to running the place right." He blamed the Louisiana Bucket Brigade (LABB) for this: the involvement of the New Orleans-based environmental health and justice nonprofit, in his view, had turned an early, company-sponsored community meeting into an ambush by irate residents and had subsequently prevented Orion from establishing a relationship with its neighbors. The December 2002 settlement with CCNS indicated that the company had finally been successful in establishing the dialogue with community members that he had sought since arriving at the refinery.

In Carter's account, the turning point in relations between Orion and its neighbors came when he was approached by two CCNS leaders, including Don Winston (also white and of a similar age), who asked if Carter would sit down and talk with CCNS's core leadership. Carter recalled that he quickly agreed, telling the residents that that was just what he had wanted all along. He met with residents without their lawyers or LABB staff, with the stipulation that relocation would not be a subject for discussion. Residents arrived with a list of other demands, which Carter agreed to. Many of these, such as the demand that Orion clean up the industrial trash strewn on a stretch of land just the other side of the fence from New Sarpy, involved issues about which residents felt strongly but of which Orion officials had been unaware—confirming Carter's belief that open lines of communication, not lower emissions, were what was necessary to break the standoff with angry residents.

For Carter, the settlement was a victory—but not a victory of Orion over CCNS, of Goliath over David. Rather, Carter would have called it a victory for both parties. With the campaign behind them, the former antagonists could enjoy a new relationship, characterized by communication and cooperation rather than conflict. The money that residents would receive from the settlement was but one way in which the two groups would work together to improve the community. And, with lines of communication opened, Carter and other refinery officials could better understand and respond to community needs. The new relationship also put an end to spurious (according to Carter) accusations about environmental problems at the refinery and put technical matters back in the hands of experts. Instead of taking bucket samples, residents were asked to report promptly to Orion any noxious odors in the community—the sort that would have triggered bucket monitoring during the campaign—so that refinery staff, committed to safe and environmentally sound operations, could locate and fix the problem.

In contrast to Carter, Anne Rolfes looked grim and deflated as she left the December 18 meeting. A white Louisiana native, the gregarious, indefatigable founder of the Louisiana Bucket Brigade had been CCNS's steadiest source of advice, encouragement, and material resources throughout the two years of their campaign. She thought it undeniable that petrochemical pollution in New Sarpy—and in other so-called fenceline communities adjacent to chemical facilities—caused respiratory ailments and other health problems for residents; that this was not an established scientific fact was, in her view, a result of biased studies and, more importantly, the failure of scientists to collect appropriate data in fenceline communities themselves. The campaign in New Sarpy was an effort to move residents out of harm's way. LABB gave community members the means to collect data to show they were being

harm, providing New Sarpy residents with buckets and helping them conduct a community health study. But Rolfes also encouraged and assisted residents in using traditional organizing strategies, including demonstrations and press conferences, to try to pressure Orion into meeting their demand for relocation.

From Rolfes's perspective, the settlement was a defeat in that it left residents next door to Orion, breathing dangerous chemicals. Moreover, Orion had won the struggle by using blatantly underhanded tactics that ultimately overcame CCNS leaders' resolve to continue their campaign. By offering residents money to drop their lawsuit and remain in New Sarpy, Orion manufactured a split within the community. They then deepened the divisions between CCNS members and previously uninvolved residents who wanted to "take the money" by helping the latter to organize into a rival community group. CCNS leaders were angered by Orion's maneuvering. But, in Rolfes's telling, the refinery's methods eventually made the personal costs of continued resistance too high for CCNS's core group of decision makers, who found themselves plagued by angry recriminations from neighbors and in need of Orion's money to repair hurricane damage to their own homes.

CCNS leaders' decision to settle thus represented to Rolfes a triumph of the oil refinery's sneaky and divisive tactics, of Orion's money and power over residents' evidence and, ultimately, their health. She worried that, by dissolving residents' campaign and taking away the motivations for their air monitoring, the settlement eroded the little power that the residents had gained with respect to the refinery through their organizing and left Orion able, once again, to insist with impunity that health and environmental problems in the neighboring community were not their fault.

Rolfes was not the only one disappointed in the outcome of that December meeting. When the meeting ended, Guy Landry, a white CCNS member in his seventies who had quietly refused to vote for the settlement, went to her and expressed his disgust at his fellow residents' decision to sell out. In doing so, he echoed a complaint that he had made at a press conference months before, when he chastised fellow residents for losing sight of the problem of health in their angry denunciations of Orion.

But the core leaders of CCNS, those who had originally been most critical of Orion and most determined to resist their underhanded efforts to derail the campaign, expressed satisfaction with the meeting's outcome. Don Winston, who had for weeks been bragging that they had finally gotten Orion to sit down and talk "like reasonable businesspeople," explained triumphantly the many ways Orion would be obligated to the community under the settlement. And Ida Mitchell (also white and in her early seventies), although she

remained as convinced as anyone that refinery emissions harmed people's health, told me with a defiant look that the community had gotten the clean air that they had wanted all along.⁵

For Mitchell, Winston, and other CCNS leaders, the decision to begin negotiating with Orion was a pragmatic matter. The Louisiana Department of Environmental Quality (LDEQ) had announced in September 2002 that it had reached a settlement with Orion. The LDEQ settlement required the refinery to rectify, and pay penalties for, the violations of the Clean Air Act alleged in CCNS's lawsuit. The enforcement action by the LDEQ made it unlikely that CCNS's suit, filed under a citizen enforcement provision of the act, could go forward. Even if it did, any additional penalties would go to the state treasury and not to the community, whereas community members would benefit directly by dropping the suit and taking Orion's offer of money. Mitchell and others reasoned that, because the LDEQ settlement would guarantee clean air for the community, there was nothing to lose—and much to gain—by settling with Orion. Further, Winston especially emphasized that, if Orion failed to meet its obligations or resumed polluting excessively, there was nothing to stop the community from once again taking action against the refinery.

But while the LDEQ's action marked a victory for clean air, CCNS leaders' sense of triumph on the night of the settlement had as much to do with the way the tone of their interactions with Orion had shifted. Jason Carter and other Orion officials had, throughout the campaign, refused to credit residents' assertions that the refinery was making them sick. Residents regarded this position as blatant dishonesty. They were incredulous when, for example, Orion officials insisted that community members had not been exposed to any hazardous chemicals released during a fourteen-hour fire in a multi-million-gallon gasoline storage tank. Moreover, these and other untruths, in the minds of residents, showed Orion's lack of respect for the community. When a refinery representative suggested that the black sediment that coated their properties was just dirt, residents complained bitterly that Orion treated them as though they could not tell the difference between garden-variety dirt and petrochemical sludge.

Orion's dishonesty and disrespect angered residents and fueled their campaign activities almost as much as their concerns about health effects did. While CCNS's campaign aimed to move community members away from the hazards of the refinery, the air sampling they conducted—during the tank fire, for example—was seen by CCNS members not only to demonstrate that they were being exposed to hazardous chemicals but also, more importantly, to prove that the refinery was lying to them.

Settlement negotiations changed the pattern of disrespect and dishonesty—at least in the minds of the CCNS leaders who participated. Beginning with their first meeting with Carter, CCNS leaders felt that Orion officials had been willing to sit down with residents and talk to them, in Winston’s words, “like equals.” They began addressing their complaints directly to Carter and other refinery officials instead of organizing meetings and press events around them, and Orion officials, for their part, consistently responded to the issues raised by community leaders.

In their new relationship with refinery managers, CCNS leaders could claim an important victory. They had not won relocation or seen their health concerns acknowledged. But residents’ Goliath had nonetheless been brought down to size. With the LDEQ settlement, Orion took responsibility for its environmental effects and ended its disrespectful denials. Key officials had made themselves accessible and accountable directly to the community, as well, through settlement negotiations that would set a precedent for dialogues to follow. In the context of this new relationship, residents accepted Orion’s assurances that they could address complaints about flares or smells directly to the company and have refinery scientists and engineers respond seriously to the issues. And even though residents like Guy Landry and Ida Mitchell did not cease to believe that petrochemical emissions affected their health, residents stopped taking bucket samples and publicly challenging now-unapproachable refinery scientists and engineers about the plant’s effects on their health and environment.

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On December 18, 2002, the dominant narrative of community-refinery relations in New Sarpy shifted. During CCNS’s campaign, both the community group and its environmentalist supporters, namely Rolfes and LABB, saw residents’ interactions with Orion as a battle, a struggle between a powerful, wealthy company and a powerless but determined community. Residents had to fight for acknowledgment of their legitimate health concerns—which they did, with LABB’s help, by collecting data on chemical concentrations and illness rates. After the settlement, however, community and refinery saw themselves as partners in dialogue. In their egalitarian communications, residents could raise concerns, including concerns about facility emissions and accidents. Refinery officials took it as their responsibility to inform residents about plant operations and, where residents’ concerns pointed to real problems, to identify and address them promptly.

In the shift to the cooperative, communicative model of community-industry relations, refinery scientists and engineers regained their control over scientific claims. As part of the new civility, residents neither collected their own data nor challenged that of experts. But experts, too, altered their approach. Prior to the settlement, experts made pronouncements whose content residents thought implausible and dishonest and whose tone they found disrespectful. After the settlement, experts did not pronounce. Instead, they informed residents of events at the refinery, they listened to concerns, and they took responsibility for flaring and accidents.

If industry scientists' and engineers' technical authority was a central target of CCNS's campaign, the new model of community-industry relations was instrumental to experts' authority in the campaign's wake. The model rested on powerful ideas about what it meant to be a responsible citizen and community member, as well as on public policies that shift responsibility for health, the environment, and social services from central governments to individuals, communities, and corporations. These ideas and policies, characterized by many as "neoliberal,"⁶ constituted the cultural terrain on which the campaign in New Sarpy was fought, as I show in this chapter's final section. The same neoliberal cultural terrain shaped the larger battles over expert authority in which New Sarpy's campaign was enmeshed: activist-led fights over the petrochemical industry's claims to sustainability, and academics' struggles to democratize environmental science and policy—to be discussed in turn in the next two sections of the chapter.

Ultimately, it was industry scientists' and engineers' strategic use of the terrain of neoliberal ideas and policies, including the model of community-industry relations to which it gave rise, that enabled them to overcome all three attacks on their technical authority. As the chapters to come will show, the terrain offered important resources that shaped the way scientists and engineers constituted themselves as experts, including the way they presented themselves as authoritative and the basis on which they claimed credibility. This refashioning of expertise, as much as the transformation of community-industry relations itself, discouraged challenges from residents—which, in turn, made it more difficult for other activist and academic detractors to mount their own attacks.

Moreover, neither transformation—of community-industry relations or of expertise—was unique to New Sarpy. In remaking themselves as responsible authorities in a relationship of cooperation and mutual respect with community members, Orion officials adopted an attitude and a set of practices already widespread in the petrochemical industry, including at peer facilities in St. Charles Parish. As a moment of rapid and dramatic change, the end of

CCNS's campaign offers the opportunity to examine the factors that enabled the transformations. That is, the case of New Sarpy shows in microcosm how neoliberal practices and ideologies have allowed not only Orion but companies across the chemical and energy sectors to define their obligations to neighboring communities in a way that both satisfies residents and preserves industry authority over contested environmental and health issues. Providing a window into larger trends, the case further illustrates what environmental activists and engaged academics are up against as they try to push forward criticisms of industry environmental practices and technocratic decision making—criticisms addressed partially, but only partially, in transformations of community-industry relations and petrochemical industry expertise.

Calling to Account

On July 27, 2001, as CCNS's campaign was gathering momentum, a chartered bus pulled up on St. Charles Street, the New Sarpy road nearest Orion's fenceline. Activists—residents fighting refinery neighbors in other communities in Louisiana and Texas and professional organizers from environmental nonprofits—piled out onto the front lawn of CCNS's president, a black woman in her seventies, for a press conference.⁷ Clutching protest signs, they surrounded Don Winston as he described a massive tank fire that had occurred at Orion earlier that summer. Among the largest in history, according to Winston, the fire had consumed more than 140,000 barrels of gasoline and burned for over thirteen hours⁸—yet no one from Orion had communicated with New Sarpy residents or tried to get them out of harm's way. Instead, residents were simply told to stay inside with their windows closed and their air conditioning turned off.

With their presence in New Sarpy, environmental activists from around the Southeast were lending support to CCNS's campaign against Orion and their attack on refinery experts. They shared residents' belief that community health was being harmed by petrochemical emissions; they echoed residents' incredulity at Orion scientists' insistence that air quality in the community had not been affected by fumes from the massive fire. But, with protest signs reading "Stop the Bush-Cheney Toxic Two-Step," those environmentalists were fighting their own battle: a battle against changes to the Clean Air Act proposed by the Bush administration (the "toxic two-step"), and a battle, more fundamentally, against public policies that did not take seriously the harm being done to communities by air toxins.

Activists' stop in New Sarpy—part of a multicity "toxic tour" orchestrated by the Texas Sustainable Energy and Economic Development (SEED)

Coalition⁹—dragged CCNS members into this larger struggle. At the national level, a broad coalition of environmental groups was fighting the Bush administration's attempt to eliminate New Source Review, a provision of the Clean Air Act that requires upgrades at refineries and power plants to be reviewed and permitted by regulatory agencies. The environmental groups objected and sought legislative action to block the change. They argued that weakening the Clean Air Act would result in larger quantities of chemicals being released into the air and that the increase in air pollution would have negative public health implications.¹⁰

Through the toxic tour, New Sarpy became a symbol and a rallying point in the fight to preserve the Clean Air Act. Against the backdrop of the refinery's tanks, activists like Anne Rolfes from LABB and Peter Altman of the SEED coalition (who, like Rolfes, is white) drew on New Sarpy residents' testimony to make their arguments concrete. The tank fire and other pollution problems in the community offered examples of how the Clean Air Act was already failing to protect people's health. Rolling back New Source Review, they argued, could only make things worse for communities like New Sarpy.

Yet New Sarpy and other communities on the toxic tour were more than just illustrations in the national environmental campaign to preserve New Source Review. Community members' alliances with regional and national environmental groups also made them participants in the campaign, as well as in other, far-reaching battles over environmental regulations and corporations' power to evade responsibility for their environmental impacts. By testifying about their experiences of refinery accidents, about the illnesses that they suffered, and about their interactions with dismissive refinery officials, community members helped larger environmental groups to question the scientific claims that underlay the policies that they opposed. Residents' testimony transformed activists' arguments about the effects of petrochemical emissions into concrete, inescapable realities—adding power to environmental groups' critiques by calling experts to account for their impacts.

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The SEED Coalition's toxic tour ended in Washington, D.C., where a group called Clear the Air arranged for residents of refinery-adjacent communities to meet with congressional staffers and ask legislators to weigh in against changes to the Clean Air Act. Residents of New Sarpy were represented in these meetings, as were residents of the neighboring town of Norco. In Norco, which was separated from New Sarpy by the Orion and Motiva refineries and bounded on its other side by Shell Chemical, the African American

neighborhood of Diamond was also in the midst of a campaign for relocation—in Diamond’s case, away from Shell, whose operating units stood less than fifty feet from some residents’ homes.¹¹

In Washington, Diamond residents Margie Richard and Jonathon Hawkins described their experiences living next to a petrochemical facility to a member of Senator John Breaux’s (D-LA) staff. Richard, a black woman in her sixties, lamented widespread health problems among Diamond’s youth, including her ten-year-old grandson. His asthma was so severe, she said, that he had had two near-death experiences in his young life and could not go anywhere without an expensive inhaler and oxygen tank—a picture of which she showed Breaux’s staffer. Hawkins, a black teenager, read a poem dramatizing life in Norco: the first-person protagonist plays in the polluted environment around his home, falls victim to a serious illness, and ultimately lies dying in a hospital bed; all the while, he intones, “they [Shell] said it [pollution] wouldn’t interfere with me.”

In the context of the national policy debate over changes to the Clean Air Act, the testimony of Richard, Hawkins, and other residents illustrated and dramatized environmentalists’ arguments that industrial pollution was harmful and would do even more harm if regulations were weakened. In addition, the presence of residents made more compelling environmentalists’ admonition that the government should protect the interests of its citizens—residents of communities like Norco and New Sarpy in particular—over the interests of big oil companies.

But the voices of residents, speaking with the authority of experience, were also powerful because they offered environmentalists an additional means of countering the scientific claims of their opponents. When environmentalists like Altman and Rolfes, who also participated in the meetings with staffers, asserted that changes to the Clean Air Act would cause additional harms to the environment and public health, they offered statistics and scientific studies to contradict the statistics and scientific studies of Bush administration and industry officials who favored the changes. In contrast, residents contradicted industry’s studies by talking about the illnesses they and their neighbors experienced—illnesses that environmentalists could subsequently refer to as additional evidence of the harms they claimed industrial pollution was doing, and would continue to do, if not properly regulated.

Judged in terms of the scientific studies volleyed back and forth by environmental and industry groups, residents’ experience of illness in fenceline communities was relatively weak evidence of industrial facilities’ health effects. The experiences of individual residents, especially when recounted by environmental activists, were easily dismissed as mere anecdotes, and

apparent clusters of illness readily chalked up to random chance. However, the challenge of residents' testimony to opponents' scientific claims extended beyond their status as evidence, narrowly defined. In narrating their experiences of apparently pollution-related illness in their communities, residents demanded that their illnesses be accounted for. They underscored, moreover, the fact that industry had no satisfactory account to give. Epidemiological studies showing no elevation of disease rates in fenceline communities could not change the *fact* that Richard's grandson, born and raised a stone's throw from a petrochemical plant, could not go anywhere without an inhaler and has had to be hospitalized because he could not breathe. Nor did calling this—and larger patterns of illness in the community—random or isolated go any distance toward explaining why children were sick in the shadow of an industrial facility. Residents' testimony, though inadequate as scientific evidence, represented a challenge to the claims of polluters that could not be fully answered in the terms of industry's scientific studies.

The particular challenge of residents' testimony, it is important to note, could also not be advanced by environmentalists alone. Offered by activists who do not live in fenceline communities, stories of illness among residents are but anecdotal evidence, clearly inferior to quantitative studies. It is only when offered by residents, like Margie Richard, who were themselves living with the effects of pollution that stories of community illness became forceful challenges to those studies. It is Richard who made her grandson's dependence on his inhaler a fact that could not be smoothed into a statistic; it is Richard to whom an explanation was owed. The testimony of residents, then, was a particularly powerful and important part of environmentalists' national-level environmental campaigns because it contested the scientific claims of industry in terms that would not have been available to environmentalists absent their alliances with fenceline communities.

Adding weight to residents' testimony—and the calling-to-account entailed therein—were buckets. Inexpensive, easy-to-use air-sampling devices, the buckets were provided to fenceline communities by the Louisiana Bucket Brigade and other environmental justice groups, which also paid for sample analysis and offered basic technical support. Residents of New Sarpy and Diamond used buckets during their respective campaigns to fill special plastic bags with the air that they breathed and to learn, through laboratory analysis, the levels of toxic chemicals that were in that air.¹² Because air samples are expensive to analyze, residents took samples only when emissions from Orion or Shell, respectively, resulted in particularly noxious odors; nonetheless, over the course of their campaigns, they took several samples, many of which showed high (dangerously high, according

to activists) levels of chemicals known to be hazardous to human health. Buckets and bucket results were subsequently incorporated into residents' interactions with the local media, the neighboring facilities, and the environmental regulators responsible for overseeing the industry. After the tank fire at Orion, for example, CCNS announced that residents had measured high levels of carbon disulfide and carbonyl sulfide during the fire; in Norco, a high measured concentration of methyl ethyl ketone arguably caused the US EPA to scrutinize the embattled Shell Chemical facility.¹³

But buckets also became part of residents' testimony in national and international forums and, by amplifying residents' calls-to-account, again helped extend environmentalists' ability to challenge industry science on other-than-scientific terms. In 2001, Margie Richard, as president of Concerned Citizens of Norco, traveled to Holland with a bucket and a bag of air collected from her neighborhood. Her trip to the United Nations Conference on Climate Change, where Shell Chemical was making a presentation, was sponsored by Corporate Watch, a group critical of Shell's environmental practices around the world. Like SEED's toxic tour and Clear the Air's Capitol Hill meetings, the trip was both an opportunity for Richard to call the plight of the Diamond community to the attention of powerful decision makers and a chance for environmental activist groups to draw on Richard's experiences in making a more general case—that, despite its claims to social and environmental responsibility, Shell was culpable for significant environmental degradation and, further, that the whole petrochemical industry and underlying hydrocarbon economy were fundamentally unsustainable.¹⁴

At the end of Shell's presentation in Holland, Richard had the opportunity to ask a question of the speaker, a senior Shell official.¹⁵ Unscrewing the lid from her bucket and removing the inflated bag inside, she asked if Shell was going to be true to its claims on paper, that it cared about the lives of people and about cleaner air. Richard indicated that there were environmental problems in Norco, where she lived a mere seventeen feet from a Shell chemical plant, and emphasized that she needed to see that something was done about it. She had brought the speaker a gift, she went on: a bag of air from Norco and a sample of the water from the town. The speaker, an elegantly dressed white man with subtly accented English, deflected Richard's question. He said that he was familiar with the issues in Norco but could not address them in that setting. Yet he also refrained from defending the company's environmental record or denying that one of its facilities could be a cause for the health concerns that Richard's testimony implied. Instead, he accepted Richard's bucket sample with the question, "Can I breathe it?"—implicitly

acknowledging concerns over the quality of the air and drawing a laugh from his audience.

At the UN conference, the bucket sample from Diamond functioned the same way that Diamond residents' testimony about their illnesses had functioned in meetings with congressional staffers. It rendered concrete and undeniable aspects of residents'—and activists'—claims about local environmental conditions; further, it demanded an account that could not be given in industry's favored scientific terms. Like Richard's asthmatic grandson, the bag of air was an object that could not be made to vanish simply by calling on studies that said that plant emissions did not affect air quality or prevalence of illness in fenceline communities. Bucket samples thus challenged industry studies and scientific claims, but not in scientific terms. Instead, they added to the list of real local impacts for which industry had to account. In fact, by supplementing accounts of illness with documentation of exposure to chemicals that could make people sick, buckets helped residents to weave together pollution and health in residents' testimony—and to demand that industry account for both at once.

By amplifying residents' calls to account, then, bucket sampling heightens the particular challenge residents' testimony makes to industry science. In the context of far-reaching environmental battles—over, for example, the control of toxic chemicals or the sustainability of the petrochemical industry—residents' use of bucket data in their sampling also enhances the ability of environmental groups to challenge scientific claims that deny that industrial pollution is a threat to public health. Just as second-hand accounts of illness in fenceline communities are dismissed as “anecdotal evidence,” in scientific debates between environmentalists and industry (in which regulators also participate), bucket results tend to be swept aside as “not representative” of air quality or chemical exposures in fenceline communities.¹⁶

While data from bucket samples are a weak form of evidence judged in scientific terms, they are potent, as objects that must be accounted for, in the testimony of residents because they call attention to the inadequacy of industry science to account for conditions in fenceline communities. Combined with residents' testimony in the service of far-reaching environmental battles, buckets enhance the ability of environmentalists to criticize industry's claims by allowing them not only to attempt to undermine the scientific studies on which those claims are based but also to ground a critique of industry claims in industry experts' inability to explain the experiences of fenceline community residents. Residents' bucket-informed testimony is especially powerful as part of environmentalists' battles because the kinds of challenges to industry science that they make possible—challenges focused

on its adequacy and accountability—are less easily overcome by well-staffed, well-funded industrial research efforts than are challenges made in strictly scientific terms.

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The night of December 18, 2002—the night that marked the end of CCNS’s campaign and the transformation of community-industry relations in New Sarpy—had ramifications for the authority of experts that extended beyond the small Louisiana town. The new relationship between the refinery and community members not only restored Orion officials’ control over scientific and technical matters. By ending New Sarpy residents’ participation in events like the SEED Coalition’s toxic tour, events that tied the local struggle to national and international environmental issues, the new relationship also weakened environmental activists’ attacks on expert claims that downplayed the dangers of petrochemical pollution. With the cessation of CCNS’s struggle, the unique challenge to industry’s scientific claims—the calling-to-account—made possible through New Sarpy residents’ testimony became unavailable to environmental campaigns. At least insofar as they depended on voices from New Sarpy, environmental groups were left to counter industry’s claims on more narrowly defined scientific grounds, where the evidence of environmentalists was more easily contested, and overwhelmed, by better-funded industry scientists.

Knowing Locally

On April 17, 2002, I dragged residents of the obscure Louisiana communities into yet another kind of battle. I described New Sarpy residents’ bucket monitoring to a demographically diverse group of Berkeley professors and graduate students intent on saving the planet by, in part, understanding and eliminating obstacles to protective environmental policies. In my presentation, I suggested that community members’ use of buckets highlighted not only shortcomings in environmental policy but also weaknesses in the way that policy was made. The data that residents produced through their sampling, I claimed, provided important information about communities’ exposures to toxic chemicals during accidents at petrochemical facilities—information that needed to be incorporated into policies to protect public health. But those policies, including regulatory standards for air quality, relied exclusively on knowledge generated by scientists and engineers, using methods accepted by experts but not subject to public scrutiny. Bucket monitoring,

I argued, showed why environmental policy, and the science underlying it, could not be left to experts alone. Both science and policy should be made in more democratic ways.

In challenging the extent of experts' authority on policy issues like air quality, I allied myself with a group of politically engaged scholars who advocate for more public participation in setting environmental policies—scholars who theorize the problems of expert-dominated policy making,¹⁷ who develop innovative approaches to incorporating citizens' voices into technical policy discussions,¹⁸ and who evaluate the successes and failures of government initiatives (prompted, often, by scholarly advice) to include its citizens in environmental policy decisions.¹⁹ By suggesting that bucket-monitoring residents could contribute even to the science underlying environmental policy, I also joined the ranks of scholars who argue that democratic approaches to policy making must involve citizens in setting research agendas, defining research questions, and gathering data.²⁰ Already combatants in grassroots struggles in their own communities, as well as participants in environmentalists' fights to change environmental policies, New Sarpy and Norco residents became, through my presentation, examples in an academic crusade to democratize environmental science and policy. Their use of buckets, as a counterpoint to regulators' approaches to assessing air quality, added to the rationale for the more participatory approaches being developed by scholars.

My social-scientist colleagues are not alone in believing that democratic participation is necessary to deciding a range of policy issues, including environmental ones. Influential scientists' organizations and government bodies also acknowledge the desirability of public involvement in policy. Where my colleagues diverge from these groups—and hope to make changes to prevailing policy approaches—is in their understanding of how citizens should be involved, and especially how they should be engaged with science. Organizations like the UK Royal Society and the American Association for the Advancement of Science note the technical complexity of the policy issues confronting the public and express concern as to whether citizens possess enough scientific knowledge to intelligently navigate those issues.²¹ For these groups, and many of the policy makers that they advise, public participation is overlaid on science: scientific knowledge serves as the common foundation on which democratic debate can be built. Furthering democracy is, accordingly, a problem of fostering “public understanding of science,” guaranteeing that the public understands the scientific foundations of policy issues well enough to participate intelligently in democratic discussions.

But the nature of citizen participation is imagined rather differently by the advocates of democratization whose league I (and New Sarpy residents) joined when I made my April 2002 presentation. These social scientists, who study science as a social practice, reject the idea that science can be taken for granted as a stable foundation for decision making.²² Rather, they point out that science relevant to environmental policy issues is inevitably contested, necessarily uncertain, and inherently value laden.²³ Many of these scholars thus advocate for participation that does not depend on strict demarcations between scientific knowledge and the values, preferences, or opinions of the public but that actually involves citizens in defining the issues that need to be addressed by policy and science.²⁴ Advocates of public participation also call for democratizing knowledge itself, proposing that citizens' "local knowledge"—of, for example, community environmental conditions—be incorporated into policy discussions and that citizens and scientists collaborate on research about the environmental and health hazards in communities.²⁵

Social scientists' calls for democratizing environmental policy turn natural scientists' call for "public understanding of science" on its head.²⁶ Rather than seeing citizens' grasp of scientific facts as essential to good policy, advocates of democratization stipulate that public policy, and even science itself, are likely to be deficient if the insights of the public are not incorporated. Their argument that citizens' understandings of technical issues, though often divergent from those of scientists, are legitimate and even necessary contributions to policy discussions, depends on examples from communities not unlike New Sarpy—communities engaged with experts around issues of environmental contamination and/or community health; communities whose health and environmental quality were ill served by experts' standard approaches to doing science; communities where residents have themselves been involved in the production of knowledge.²⁷

Where scholars have argued that scientific knowledge is inherently political and value laden, empirical research in communities has both made the point concrete and demonstrated the consequences of the finding for real environmental and health problems. For example, in a study of interactions between sheep farmers in northern England and government scientists sent to advise them on what to do with flocks contaminated by radioactive fallout from the 1986 Chernobyl nuclear explosion, Brian Wynne shows how scientists' advice, based on computational models, incorporated their orientation to prediction and control. These unacknowledged values hindered farmers' efforts to deal with the situation when scientists offered with great certainty information that turned out to be wrong; accustomed to making decisions in

the face of uncertainty, farmers would have been better served, Wynne suggests, by advice that made the limitations of scientific models clear.²⁸

Case studies of communities and their interactions with experts have also shown that science and scientists' ways of knowing routinely neglect community members' specialized knowledge—and that their “local knowledge” is necessary to good science. In the case of the sheep farmers, Wynne argues that government scientists' faulty models could have been improved if scientists had learned from farmers about the specifics of local soil types and grazing behaviors.²⁹ Other scholars have shown that scientists tended to underestimate the health risks posed by polluted waterways because they significantly underestimated the amount of fish eaten by at-risk communities, especially Native American and ethnic-minority communities; creating more accurate risk assessments has depended heavily on community members' participation in the risk-assessment process.³⁰ The importance of local knowledge to robust science has likewise been demonstrated in studies of fenceline communities' efforts to gather data about illnesses and environmental exposures,³¹ as well as in studies of challenges to the medical research establishment by disease sufferers.³²

The case of bucket-monitoring New Sarpy residents does similar work for the cause of greater public participation in environmental science and policy making. Used to measure exceptionally high levels of chemicals present during accidents and other unplanned releases from industrial facilities, buckets capture data that are neither gathered by facilities or regulatory agencies nor acknowledged by those experts as important to assessing the potential effects of industrial emissions on community health.³³ The contrast between bucket and experts' monitoring shows how “representativeness,” a central value of scientific research but not necessarily a universal goal, makes scientists blind to the potential importance of pollution spikes as a contributor to community health problems. Moreover, bucket monitoring demonstrates the value of residents' “local knowledge”—their knowledge of the symptoms, including itchy eyes, shortness of breath, and nausea, associated with peak periods of pollution.

In the academic crusade for democratization of science and policy, the examples of places like New Sarpy (and Cumbrian sheep farms and Native American reservations) are important. They take a key theoretical justification for democratization—that science is never politically neutral and thus should not be given a privileged position in democratic decision making—and make it concrete. They show what we risk if we allow the values inherent in science to go unexamined: neither sheep farmers nor Louisiana environmental regulators will have the right *kind* of information on which to act.

Case studies of community-expert interactions also offer an instrumental justification for broadening participation in science: absent the insights that community members can offer, scientists cannot produce accurate knowledge on which to base sound policies. Without these examples, scholars' arguments for expanded public participation would rest entirely on claims about the nature of science and moral arguments about what is fair and just in democratic society. With the examples, scholars can add to their arguments accounts of what could happen to the health of actual people and the environment in particular places if expert knowledge is allowed to dominate policy-making processes.

* * *

On October 21, 2002, I joined representatives from Orion and Shell, New Sarpy and Norco, the LDEQ and the U.S. Environmental Protection Agency (EPA), LABB and the SEED Coalition, and a few others, around a large conference table in a meeting room at Tulane University. We gathered that Monday morning to spend a couple of hours discussing the problem of air monitoring in fenceline communities—what was and was not being done, how it could be done better—in the first-ever “Monitoring Roundtable,” which I had organized at the behest of Anne Rolfes and Denny Larson, a white community organizer then with the SEED Coalition, in my role as LABB volunteer.³⁴

The Monitoring Roundtable was, in a sense, an exercise in the kind of democratization that academics like me argue for in their writings: environmental justice activists sponsored the forum as a way of inserting themselves and community members into expert-dominated processes of air quality monitoring and assessment. Larson and Rolfes had long argued that the information about air quality produced by agency and industry scientists and engineers did not accurately represent the environmental conditions in fenceline communities. The experts, they charged, did not monitor near enough to polluting facilities, soon enough after accidents, or at high enough sensitivities to detect the chemicals that were harming community members' health. Bucket monitoring, in the eyes of activists, corrected these shortcomings. It also created a role for nonscientists in the process of making knowledge about air quality.

The Monitoring Roundtable extended activists' participatory push. It brought a topic usually deliberated by experts alone—how knowledge about air quality ought to be made—into a forum that included community members and their activist allies. In the discussion, Shell representatives touted

their Norco monitoring initiative, which included an unprecedented density of monitoring stations but collected data using a protocol scorned by activists. Politely refraining from rolling their eyes, Larson, Rolfes, and Don Winston spoke enthusiastically of the possibilities offered by real-time, fenceline monitors and high-tech hand-held devices. And drawing on my analysis of the reasons agencies and industries monitored the way they did, I suggested that Federal Reference Methods—standards for conducting monitoring—needed to be reconsidered, preferably in consultation with communities.

One small skirmish in the battle to democratize science and policy, the Monitoring Roundtable relied on activism in New Sarpy and places like it. On its own, the Louisiana Bucket Brigade would not have been able to persuade regulators and industry scientists to participate in a public discussion of a topic that they considered their domain. Even with cosponsorship from a professor from the Massachusetts Institute of Technology, whose interest in trying out new, potentially community-friendly monitoring techniques in Louisiana had occasioned the roundtable, it is unlikely that LABB and its graduate student volunteer would have been able to summon experts to deliberations on monitoring strategies.

The experts who attended the roundtable were compelled to the discussion because of community activism. Regulatory agency representatives arguably participated because, in March of 2002, activists petitioned the EPA to revoke the LDEQ's authority to administer the Clean Air Act (CAA), using New Sarpy as an example of the state agency's gross negligence and incompetence. When the EPA subsequently met with representatives of New Sarpy, the monitoring roundtable seemed to appeal to them as a palatable way to mollify activists. LDEQ representatives participated at the suggestion of the EPA and, in turn, recommended that a representative from Orion—subject of a recent enforcement act by the LDEQ under the CAA—also attend. Shell representatives attended, apparently, out of a desire to maintain the company's newly amicable relationship with Concerned Citizens of Norco, established in the wake of the community group's hard-fought campaign.

Other efforts to make science and policy more participatory—interventions studied and staged by scholars like me—have similarly depended on the political agitation of particular communities. AIDS activists angered by the way new drugs were tested, for example, were included in setting rules for clinical trials only after an extended period of activism,³⁵ and communities that collaborate with regulatory scientists on new approaches to risk assessment are invariably mobilized prior to their participation.³⁶ Organized around controversial issues such as genetically modified organisms and telecommunications reform, consensus conferences and other regional- or

national-level deliberations on science and technology,³⁷ too, depend on the efforts of social-movement groups to make the issues subjects of public concern.

The struggle to democratize science and policy not only relies on communities like New Sarpy for examples that justify, in concrete terms, the need for participation. For scholars who wish to contribute to, as well as argue for, democratization, they provide the sites and occasions for participatory interventions. Communities like New Sarpy provide sites where people feel that it is pressing to say to scientists and engineers, “you are doing your science badly.” They offer occasions where experts, policy makers, or both, for a variety of reasons, feel compelled to listen. Without these places and moments, arguments for greater democracy, even ones with the force of concrete examples and instrumental rationales, would remain confined to the pages of academic journals and university press books. Activists’ efforts to challenge scientists’ methods and insert themselves into decision making give engaged scholars something to engage.

* * *

While I and other academic researchers were using communities like New Sarpy to question the authority of experts—to argue that expert knowledge should be decentered and the insights of ordinary citizens incorporated into public policy debate—New Sarpy residents laid down their buckets and went back to relying on experts for information about the environmental and health effects of the facility. When, in December 2002, they stopped campaigning and embraced a new kind of relationship with Orion scientists and engineers, they not only stopped contributing to environmental activists’ criticisms of experts’ claims about pollution and health; they also stopped supporting scholars’ challenges to experts’ dominance in environmental policy processes. They stopped being an example—except in the past tense—of the harms that experts’ unacknowledged values and disdain for local knowledge could cause; they stopped providing moments for experiments in participation.

In fact, New Sarpy residents’ new, respectful relationship with refinery experts potentially undermined the argument that ordinary citizens should play more of a role in shaping environmental science and the public policies on which it is based. Residents’ apparent satisfaction with expert knowledge in the wake of the settlement reintroduced the possibility, suggested by Orion’s Jason Carter in his account of the settlement, that nonscientist community members were simply misinformed about the potential effects

of refinery operations. Residents' willingness to abandon their buckets opens them to the charge that their criticisms of the refinery's environmental record were really a smokescreen for other, nontechnical grievances. If New Sarpy residents really did just misunderstand science, if their use of buckets was really just political, if better communication with refinery experts was all that was necessary to resolve the conflict, then greater democracy is not even necessary. Scholars like me are on the wrong track.

Fortifying Expertise

On December 18, 2002, when Orion's scientists and engineers successfully redefined their relationship with New Sarpy residents, they turned back three attacks in one smooth motion. They ended CCNS's bucket monitoring—and residents' claims that refinery experts lied about their emissions. They deprived environmental activists of New Sarpy residents' powerful calls-to-account, forcing them to fight experts on their own, scientific turf. And they weakened academic assaults on expert authority by depriving scholars of an important rationale for and site of expanded participation.

But how did they do it? How did refinery scientists and engineers reestablish themselves as *the* legitimate, credible sources of technical information? And why was forging a new kind of relationship with the community—rather than simply overpowering them—so important to this endeavor?

The answers have everything to do with the terrain on which they fought. The battleground that was New Sarpy was shaped by powerful ideas about what it means to be a responsible person and what makes a nice community. So too was it shaped by public policies that favor voluntary initiatives over command-and-control regulations; private entrepreneurship over public services; and mediated agreements among stakeholders over direct state intervention. For scientists and engineers striving to regain control over technical issues, these ideas and policies became resources. By creatively mobilizing these resources, by taking advantage of the strategic positions that they offered, refinery experts simultaneously reshaped their relationships with residents and refashioned their own authority as experts.³⁸

In the course of my fieldwork in New Sarpy, I was surprised at how much Orion officials—and the officials at petrochemical facilities in Norco, whom I would eventually interview as well—seemed to care about maintaining a good relationship with the residents of neighboring communities. I was even more surprised by their rationale. More than one of them told me that they were committed to being “good neighbors” because their “license to operate” came from the community—when, technically, it does not. Orion and other

Louisiana petrochemical facilities are licensed to operate not by residents of neighboring communities but by the LDEQ, which issues operating permits to the facilities.

This counterintuitive idea of *communities* granting companies the right to operate, I came to understand, speaks volumes about the political terrain on which struggles like the campaign in New Sarpy play out. Specifically, it represents one aspect of trends in environmental governance that tend to shift the burdens of environmental protection away from governments and to individuals and markets instead³⁹—and that, ultimately, helped industry experts to reestablish their expertise despite criticisms from residents, environmentalists, and academics.

Over the last several decades, the role played by agencies like the LDEQ and the U.S. Environmental Protection Agency in protecting the environment has been changing. Government agencies have been called on to find alternatives to top-down regulations that specify pollution-control technologies that companies must use or emissions levels that they must not exceed. In place of these so-called command and control policies, agencies have been experimenting with approaches that shift responsibility for pollution prevention and control to corporations and the free market.⁴⁰ Emissions trading schemes, voluntary programs, and industry-sponsored initiatives all rely on companies themselves to identify and pursue opportunities for emissions reduction. In the chemical industry, the scaling back of government regulation in the 1980s led to the establishment of the Responsible Care program, an initiative of the industry's major trade group (the Chemical Manufacturers' Association, since renamed the American Chemistry Council, or ACC) that requires member companies to implement an environmental management system and strive for continuous improvement in environmental performance.⁴¹

As regulatory agencies have moved from being the drivers of pollution prevention to being the overseers of or partners in industry- and market-based efforts, they have also sought to shift responsibility for addressing citizens' concerns about pollution to companies. Agencies invite public comment on permitting and other decisions as required by environmental laws; however, where serious conflict between community groups and industrial facilities arises, regulators often express the desire to see community and facility work out the issues themselves. In Louisiana, the LDEQ's Community-Industry Relations group routinely responds to contentious situations in fenceline communities by setting up a Community-Industry Panel to provide warring factions the opportunity to air their disagreements and, through dialogue, to work them out.⁴² This regulatory approach echoes the

strategy, common throughout the chemical industry, of establishing Community Advisory Panels (CAPs) to address or even forestall community grievances.⁴³

Through their preference for dialogic approaches, regulatory agencies shift to companies the responsibility for managing community-industry conflict, participating only as a mediator rather than an enforcer or adjudicator. At the same time, they impose a reciprocal obligation on community members. They demand that aggrieved residents engage in reasonable, respectful, face-to-face discussions with industry representatives—and delegitimize both contentious collective-action strategies and demands for regulatory agencies to actively police the industry. Not only facilities but also community members thus assume some of what had been the regulatory agency's responsibility for ensuring the acceptability of industry's environmental performance.

The shifting of responsibility from environmental regulatory agencies to corporations and individuals echoes broader trends in governance in the United States, as well as in many other nations. Since the 1980s, numerous commentators have noted, the role of government has been redefined by powerful political actors: where the central state's primary obligation had been to provide for its citizens, it is now expected, first and foremost, to guarantee the unfettered functioning of the free market.⁴⁴ The underlying expectation that human needs are most efficiently met by corporations in competition with one another has led to policies that devolve responsibility for basic social services to lower levels of government and, perhaps more significantly, to for-profit entities. Public schools, for example, are in some municipalities now run by private corporations, as are many states' prisons. In the environmental realm, policies that privatize natural resources, that set up markets for the right to pollute, and—as in the chemical industry—that remove regulations thought to impede the business decisions of companies are all reflections of an ideology, often dubbed “neoliberalism,” that places support for free enterprise at the heart of the government's responsibilities.⁴⁵

As the social functions of the state have been redefined, so too have the responsibilities of its citizens. Theorist Nikolas Rose argues that, under what he terms “advanced liberalism,” citizens are expected to take charge of their well-being. They are, for example, assigned responsibility for health and illness: no longer is disease regarded as inevitable and naturally occurring; rather, it is something that citizens can avoid through careful management of their personal risks. More generally, individuals are supposed to be “enterprising,” always actively engaged in projects of bettering themselves—projects that involve seeking out, and relying on, the advice of a variety of experts.⁴⁶ The assignment of certain kinds of responsibility to citizens, like

changes in the responsibilities of the state, is evident in environmental policies, including, for example, policies that rely on the prudent action of individuals to conserve natural resources.⁴⁷

The redistribution of responsibility among government, private entities, and individuals has been criticized extensively by scholars and activists alike. They charge that the policies of neoliberalism create a kind of market rule that undermines participatory democracy,⁴⁸ contributes to the depletion of natural resources and the degradation of environmental quality,⁴⁹ and further disadvantages economically and socially marginal groups,⁵⁰ among other ill effects. Yet, in part to ground their criticisms, scholars have shown how these policies, and the ideologies on which they rest, form an extensive and uneven cultural terrain⁵¹ on which local politics play out. Studies of local environmental politics, for example, have documented how policies of privatization and deregulation have shaped the possibilities for collective action and social change on issues ranging from ecosystem restoration to environmental justice.⁵² In general, these and other studies show how the neoliberal cultural terrain tends to close down space for dissenting voices and critical resistance to capitalist projects; however, they also occasionally note opportunities for progressive politics to gain a foothold in otherwise unfriendly territory.⁵³

Like so many other environmental struggles, Concerned Citizens of New Sarpy's campaign and New Sarpy residents' subsequent settlement with Orion played out on neoliberal cultural terrain. In New Sarpy, the characteristic reassignment of responsibility to individuals and private enterprises manifested in the Louisiana Department of Environmental Quality's reluctance to intervene in the conflict, which put pressure on CCNS to resolve their campaign through dialogue. It permeated debates about whether the community had preceded the refinery or vice versa—debates founded on the idea that individuals had the ability and obligation to evaluate the risks of living in New Sarpy before moving there. And the increasing burdens placed on local governments by neoliberal policies, including the need to attract private investment, fueled residents' anxiety about protecting an image of their community as a nice place to live and work amid claims that it was uninhabitably polluted.

As in other places, the local landscape of neoliberalism in New Sarpy shaped the outcome of CCNS's campaign. In general, the demands of individual and corporate responsibility acted against residents' attempts at collective action; for example, residents' concern for the quality and image of their community became a point of leverage for Orion as it sought to force residents to abandon their opposition. But more than just helping to determine

the outcome of the campaign, the neoliberal terrain on which CCNS's battle was fought also shaped the fate of expertise. In the wake of residents' criticisms of experts' knowledge, refinery scientists and engineers were able to reclaim their authority by repositioning themselves on this cultural terrain. The local manifestations of neoliberalism—including the relative absence of the state, the push to community-industry dialogue, the concern for community image, and the obligation of informed residential choices—all provided opportunities for experts to reestablish a credible and authoritative position on technical matters.

Over the next several chapters, I show how petrochemical industry scientists and engineers used the terrain of neoliberalism to overcome critiques of their science and reconstruct their expertise. I demonstrate how discourses of individual responsibility and residential choice provided an opportunity to experts to position themselves as informers of responsible choices (chapter 2); how concerns for community image made previously contested expert knowledge seem restorative in the wake of community campaigns (chapter 3); how community-industry dialogue served as a venue for experts not only to demonstrate their technical knowledge but, more importantly, to express their commitment to environmental quality (chapter 4); and how the association of local facilities with multinational corporations—a facet of neoliberalism's push to global free trade—allowed experts to ground their authority in the moral status of their socially responsible parent companies (chapter 5).

With each of these moves, I argue, scientists and engineers positioned themselves on a decidedly neoliberal terrain in ways that support their claims to authority and shield them from attacks by disgruntled residents—as well as from attacks by allied environmental activists and academic advocates. Moreover, their specific positioning, shared by technical experts throughout the petrochemical industry, helped them recover from the critiques of these groups because it redefined the bases for expert authority. On the cultural terrain of neoliberalism, experts do not merely reassert their authority on the basis of their mastery and infallibility in technical matters. Rather, they find new grounds for claiming expertise, building their authority on claims to be responsible and committed to both their facilities and the communities next door.⁵⁴

Conclusion

When New Sarpy residents settled with Orion in December 2002, I believed that the ethnographic research I was conducting had ceased to be about citizen science and challenges to expert knowledge. It had been transformed, I

supposed, into an ethnography of community-industry relations. My contributions to social scientists' struggle to democratize environmental science and policy would have to be made through some other project.

Now I think that I was wrong. With this book, I *am* taking up arms in the struggle to democratize environmental science and policy. Focusing on a case where citizens' challenges to science were thwarted, this book furthers the cause by providing insight into why experts' authority on environmental policy issues is difficult to unsettle. It is not just that petrochemical corporations and their experts are powerful and community groups are weak. It is also that expertise is dynamic: refinery scientists and engineers are able to recraft the bases for their authority. By doing so, they can accommodate some of communities' (and activists' and academics') criticisms and make others irrelevant. And, in the process, they not only draw on contemporary policy trends and the ideologies that underlie them; they also tie their authority more firmly to larger structures of power.

Showing how refinery scientists and engineers use neoliberal ideas and policies as resources in refashioning their authority, this book links the struggle for more participatory environmental policy to battles against neoliberalism being fought by other politically engaged social scientists. These researchers have documented the consequences of neoliberal policies—showing them to be multivalent and contradictory but almost always to the detriment of the world's most vulnerable people—in order to help marginalized communities and international social movements combat the deepening inequalities, erosion of democracy, and degradation of the environment associated with neoliberalism. To the extent that neoliberal policies and ideologies help shield expertise from the criticism of not only academics but also environmental activists and grassroots groups, their struggle is necessarily an aspect of the struggle to democratize environmental policy. Simultaneously, identifying neoliberalism's contributions to expert authority provides further insight into the processes through which neoliberal policies tend to consolidate power, undermine democracy, and contribute to worsening environmental conditions.

In a crowded, windowless, cinder-block room in New Sarpy on December 18, 2002, far more was at stake than whether residents of a small Louisiana town would make a deal with a giant refinery or would continue to try to topple it. Community members' determination to challenge refinery scientists and engineers' "facts" about pollution and health with their own data had made them compelling voices in far-reaching struggles to control the environmental effects of the chemical industry; it had also positioned them as important examples in arguments for replacing expert-dominated

environmental policy processes with more broadly participatory approaches. But New Sarpy residents' willingness to establish a newly cooperative, respectful relationship with the refinery—and to defer to refinery experts' authority on matters of pollution and health—makes the town a case study in the ways in which new distributions of responsibility and other “neoliberal” innovations make expertise hard to contest, democratic participation hard to achieve, and environmental contamination hard to avoid.