CHAPTER 5

A Question of Responsibility
The Legacy of Bhopal

QUESTIONS TO KEEP IN MIND

Why did the factory in Bhopal suffer the explosion of toxic gas?
What did the various players in the drama seek to do about the explosion and its effects? What was their motivation?
How could the explosion have been prevented? What ought we to do to make sure that technical enterprises in developing nations are safe for the people of the nation?

DESPERATELY SEEKING WARREN ANDERSON

Warren M. Anderson, chairman of the Union Carbide Corporation during the 1984 chemical disaster at Bhopal, India, has apparently gone into hiding to avoid a summons to appear in a Manhattan federal court as part of civil proceedings against him and the company, say lawyers who have hired a private investigator to locate Mr. Anderson.”

As of March 4, 2000, he was apparently not at his last-known address in Florida; Union Carbide, with corporate headquarters Danbury, Connecticut, has refused to accept a summons on his behalf. (Sierra helpfully published a “Wanted” poster of him in their July/August 2000 issue.)
The first time the public met Warren Anderson, then CEO of Union Carbide Corporation, he was on an airplane on the way to India. Two nights before, on December 2, 1984, a pesticide plant in Bhopal, India—built by Union Carbide Corporation, and run at that time by Union Carbide India Limited (UCIL)—had sustained a monstrous explosion. Forty tons of methyl isocyanate (MIC) gas had blown up, releasing into the air surrounding the plant a lethal mixture of MIC, hydrogen cyanide, monomethyl amine, and carbon monoxide, among other chemicals. The figures are still in dispute and will probably remain so, but an estimate in March, 2000 put the dead at 3,000 and the injured at 200,000. Anderson could not have known the figures as his plane approached the airport, but he knew that many had died, many were injured, and he had announced immediately that the company took full moral responsibility for the disaster. The victims would be compensated. He brought with him on this trip authorization from his Board of Directors to commit from $1 million to $5 million in cash immediately to help the victims, and to find out what further was needed to remedy the damage.

It was not to be. Anderson was arrested by the Indian authorities as he stepped off the plane, taken to a company guest house and put under house arrest. He was charged with murder, “culpable homicide.” He was not allowed to speak with the victims, nor with his managers from the plant, nor was he allowed to offer help in public. Promised interviews with the governor and the prime minister never materialized; not even the environmental minister would talk to him. In a few days he was put back on a plane, still not allowed to talk to anyone, and sent home.

The next months must have been a nightmare for Union Carbide’s management. They addressed the problem as directly as they knew how, placing the resources of half the company on the trail of the explosion, to find out how it happened, how such an explosion could be prevented in the future, and what might be done to remedy the damage done by it. Warren Anderson personally took charge of this investigation. It was very difficult, since they had to reconstruct the route of the reaction through hypothetical scenarios at a distance. It was many months before they were permitted to visit the plant (it had been closed off as a “crime scene” by the Indian equivalent of the FBI) or interview the workers. Not until July were they permitted to go to the wreckage of the exploded tank to take out the core samples of sediment that would show them how the explosion occurred. Not until then could they determine that only a deliberate act of sabotage could have caused it. Incidentally, the UCIL managers on duty the night of the explosion had claimed at the time that the blast was the work of a saboteur. They later retracted that assertion.

Whatever happened to Warren Anderson? After the investigation was complete, he saw the resulting litigation, and the negotiations with the Indian government, through to the end. Litigation and negotiations took on a strange significance in the case. The lawyers came from America
within days of the explosion to represent the victims in lawsuits that they had every reason to believe would be very profitable. International ambulance-chasers of the stripe of Melvin Belli, John Coale, F. Lee Bailey, and eventually Stanley Chesley claimed only that they wanted to represent the helpless widow and orphan, to make sure that the poverty-stricken victims got what was due them. But their plans to take 30% of each of the awards, or at least as much of that as they could persuade a judge to allot them, were openly mentioned and discussed from the time they laid foot in India. First on their own behalf, going from door-to-door persuading the poor of Bhopal to sign retainers appointing them as attorneys, and then (after the Indian government took over that role) in the efforts to persuade the Indian government to hire them as their representatives in the American courts, the lawyers had mentioned sums beyond anyone’s imagination: millions for the victims, billions for the government. They were taken all too literally, and the inflated expectations they imported into the situation made the later negotiations that much more difficult.

But the lawyers had an important role to play. It is certain that if American lawyers had not brought the victims’ cause to the fore, no one else would have. No Indian lawyer, or indeed the Indian government, showed real interest in compensation for the victims until the American lawyers arrived. In a telling comment to the press soon after his arrival in India, Melvin Belli explained why he wanted the cases tried in the United States: “. . . in court, you don’t appreciate the dignity of a man as much as we do.” By “dignity,” he meant worth: worth as an autonomous individual, worth as a human life, and worth in court in terms of monetary compensation. (Kant to the contrary notwithstanding, “price” and “dignity” are not incompatible in a court of law.)

For this is India, “steeped in poverty, apathy, corruption, and greed, an India that, while laudably dedicated to democratic freedoms, still judged the value of a life by the kind of work a person did.” And where tort law is concerned, that judgment is crucial. Tort law is undeveloped in India, for “compensation for injuries” is not a matter of fundamental right in a place where injuries occur so often to so many. “Since there are no civil juries in India, judges determine liability and damages, and they are not overly impressed by calamities that kill thousands and simply punctuate the rough rhythm of survival in India.” According to all sources, India is not the place for a tort action on behalf of the poor. The poor are expected to accept their lot. Victim and judge both agree that most injuries are a matter of fate and could not have been avoided, and in any case, the value of what was lost—scrap of property, time, health, limb, life—is so small in the social reckoning that the suit is hardly worth the lawyer’s effort. Until the Americans arrived, and talked of infinite money, no one else was talking about the infinite value of a human life. (And why should not the value of an Indian life be just as infinite as the value of an American life?)
Litigation began, initiated by teams of lawyers who wanted to represent the victims in damage suits against Union Carbide before U.S. District Court Judge John Keenan, to whom the multifarious suits had been assigned. Their object was to have the cause tried in the United States, where the money was better. On May 12, 1986, Keenan ruled against them on the grounds of forum non conveniens ("this isn't the right place to do this"), and sent the collected lawsuits back to India, on grounds that that was where the accident was, as well as the victims, witnesses, documents, and applicable laws. The decision did not sit well with the lawyers, who appealed all the way up to the Supreme Court before accepting that they would have to deal with India. The decision was a significant advance in the case. First, it put the proceedings back where they belonged. Second, the court ordered that Union Carbide should have access to victims, ex-employees of the closed plant, and to documents in the case (including the plant logs) so that they might prepare their defense. It was in those interviews that Union Carbide eventually pieced together the sequence of events that preceded the explosion. Third, the judge instructed Union Carbide, along with the lawyers, to accept the jurisdiction of the Indian courts until the case should be settled. Most significantly of all, the judge accepted $5 million from the company for relief for the victims. That was the first money actually to leave the United States to go to the victims.

And until the final settlement, on February 14, 1989, that was the last money they would see. During the litigation, the victims received nothing. At no time during those years was Anderson permitted to renew his offer of immediate aid, in the millions of dollars, for the victims. By February 1985, three months after the blast, the Union Carbide Employees' Bhopal Relief Fund had collected over $100,000 for the victims, but had no one to give it to. That April, India again rejected "out of hand" any comprehensive settlement. The efforts continued. Union Carbide built a Vocational Training School at Bhopal to relieve the poverty of the area; when the Indian government found out who built it, they closed it. Arizona State University then built a rehabilitation center for the injured with $2 million of UC money. "The center was built, and operating well, but when the state government found that Carbide money had funded it, bulldozers were sent in to knock the building down."

Every nonprofit intermediary was contacted to convey UC money to the victims, including the Red Cross and Mother Teresa; all had more political sense than to get in the middle of the dispute, and turned down the money.

The litigation on behalf of the victims lost much of its steam when it was ordered back to India, and the rest of it when the Indian government invalidated all the cases and took over litigation on behalf of the victim. Finally, three years later, when the Indian government realized that they were not going to extract from Union Carbide the billions and billions promised by
the American lawyers in the first flush of chasing the international ambulance, they settled, on Valentine's Day in 1989. Judge R. S. Pathak of India's Supreme Court directed a final settlement of all Bhopal litigation for $470 million (reputedly more than Carbide's last offer, but less than the $500 million they were willing to pay if they had to). The amount had to be paid by March 31, 1989; in fact, it was paid at the end of February. The terms of the settlement included the vacating of all "criminal charges" against Anderson and any other individuals, and release of Union Carbide from any further liability with regard to the accident. By the time of the final settlement, Anderson had already resigned from the Board of Directors and retired. He was not available for comment after the settlement, and everyone thought he had gone to Florida.

THE CORPORATION IN INDIA

Why was Union Carbide in India to begin with? What is methyl isocyanate, and why was it considered worth manufacturing, despite its known tendency to explode and kill people under certain circumstances? And given such a lethal chemical, was it right to maintain the relatively low level of security that permitted the sabotage to take place? Could the incident have been prevented?

Despite its American name, the company whose gas exploded into that lethal cloud was largely Indian-owned, and completely Indian-operated. It had been founded (as a branch of the American corporation) almost 50 years ago to provide pesticides for India's agricultural “green revolution”; the plant at Bhopal dated from 1969. There was nothing exotic or extraordinarily dangerous in the operation of its plants; the most common kind of pesticide produced in them was carbaryl, an ester of carbamic acid, a reliable and relatively safe product, marketed in the United States under the brand name SEVIN.

Yet there is no doubt that the chemicals employed in the process of making the pesticide are dangerous. Phosgene, the deadly gas briefly used in World War I on the battlefield (and also in the gas chambers of the Third Reich) is a precursor of SEVIN. The process used by UCIL for its manufacture uses phosgene (COCl₂) and a methyl (CH₃) amine (NH₂) to produce the intermediate compound methylcarbamoyl chloride (CH₃NHCOCl). The latter compound breaks down with heat into MIC and hydrochloric acid (HCl). Methyl isocyanate (CH₃NCO) is a variation of the cyanide group (N CN) of which the highly poisonous hydrogen cyanide (HCN) is probably the most famous. MIC is extremely unstable and dangerous, and as such is not ordinarily studied in a laboratory situation. Its boiling point is 39° C. (102.4° F) Lighter than water in liquid form, but heavier than air in gaseous form, it hogs the ground when released. Its breakdown products include carbon dioxide and stable...
amines (organic compounds of carbon, hydrogen and nitrogen), but the process releases a vast quantity of heat (exothermic). It reacts violently with water (producing breakdown products and high temperatures), whether it's water that enters the MIC storage tanks or the water in human tissue. Therefore it is an extremely dangerous human poison—and there is no known antidote. OSHA regulations allow human exposure at 0.02 parts per million (ppm) over an 8 hour period, irritation is felt at 2 ppm, and becomes unbearable at 21 ppm. 5 ppm will kill 50% of an experimental rat population (LD50). Of course, no one measured the concentration of the escaped gas at Bhopal, but as 50,000 pounds of it escaped, the heart of the cloud must have greatly exceeded those limits.

The MIC is then used as an intermediate in the production of SEVIN, which is considerably less poisonous than its chemical precursors. But why make the pesticide in India, in the middle of a dense colony of people, instead of some remote area in the United States, from which the relatively safe finished product could be exported? Because it made a lot of sense to put pesticide plants in India instead of manufacturing the SEVIN in the United States and exporting it: transportation costs (and dangers) were eliminated, and labor costs were a good deal lower in India, making the whole operation safer and more profitable as far as Union Carbide was concerned. It also provided tax revenues and very good jobs in a chronically depressed economy. Indeed, the Indian governments sought, welcomed, and catered to those American companies that were willing to locate plants in their large and needy country. The land on which the plant in question was built was given to Union Carbide by the Indian government for an annual rent of $40 per acre, as part of the plan to bring industry into the area. (Bhopal is the capital city of Madhya Pradesh, the largest and one of the poorest states in the nation.) At the time of the accident, there were 14 Union Carbide plants in India. Ownership was divided; half of the enterprise was owned by UC, the Indian government held about 25% of the stock, and the rest was held by Indian citizens. The management of the plant was wholly Indian; the last American employee had left the Bhopal plant in 1982.

How had a wholly American plant become half-owned and wholly managed by Indian nationals? Since the plant had been established, popular attitudes toward Western enterprises had changed radically, in India and in much of what was then called the Third World. What economic interest had invited, political nationalism now despised. At the time of the accident, UCIL's Bhopal plant was widely seen as an American intrusion into the Indian economy, an outpost of foreign colonialist capitalist greed in a sovereign state. In practice, the divided ownership and consequent division of responsibility for the safety of the plant—the Americans responsible for the design, the Indians responsible for implementation—fostered an attitude of complacency and unconcern for the details of the safety arrangement, and of mutual suspicion for decision-making
authority. Those attitudes predict the inexcusable inattention to safety lapses before the explosion and the tragic chain of events that followed the explosion: recriminations, litigation, continuing political hyperbole, threats of further litigation—and no relief at all to the actual sufferers.

Union Carbide is not the only American multinational corporation to experience a reversal of the welcome mat. What, really, is the obligation of an American corporation in such situations? For purposes of this telling of the story, the major concern is with environmental safety and the possibility of environmentally disastrous industrial accidents, which is the domain of the Health, Safety, and Environment Department of the corporation (other accounts might examine only the profitability of such arrangements, and reach different conclusions). When nationalism insists that the plant must be run by national managers, and Americans can no longer exert the kind of control that may be necessary to ensure safety, are they obligated to withdraw the whole operation?

THE EXPLOSION: ACCOUNTS AND RESPONSIBILITIES

How did the explosion happen? When Anderson touched down, no one knew. There would be no evidence until investigators were allowed to search the scene and analyze the chemical residues on the bottom of the wrecked tank. The investigators found, among other junk in the tank, chloroform (CHCl₃). That was a contaminant; it should have been removed by distillation earlier, but could not be, due to a higher than normal temperature in the still (the refrigeration unit was broken). The initial heat of the reaction had come from the simple interaction of water and MIC, an intensely exothermic reaction. But it was the chloroform that provided the chlorine ions that attacked the steel lining of the tank, which in turn released the iron ions that acted as a catalyst for what the chemists call “trimerization,” (three molecules of MIC reacting with each other to form a more complex molecule), a reaction that is even more exothermic. MIC, usually held at 20°C (ideally at 4.5°C) finally reached 120°C. By now, of course, the MIC had boiled (vaporized), and the pressure blew the tank, releasing a cloud that covered 40 square kilometers. None of the safety devices had worked, and the emptying of the huge tank—and the resulting devastation—was inevitable.

The simmering hostility that had led to the transfer of control over the plant burst into open warfare after the accident. Why, after all, did it take the Indian authorities so long to get money to the victims? The answer seems to be a combination of politics and calculation. On the political side, much advantage seemed to be flowing from portraying Union Carbide as “murderers,” who had knowingly foisted a terribly dangerous operation on an unsuspecting community. The political players were...
soon competing with each other in hyperboles of condemnation and blame of the company, in scornful rejection of any proposed settlement as a tiny fraction of what was really owed, and in posturing as saviors from the unimaginable dangers of anything the company might ever again do with regard to Bhopal. For instance, in what may have been the supreme act of cynicism in the entire Bhopal affair, Arjun Singh, Governor of Madhya Pradesh, created, from whole cloth, a full-blown panic in Bhopal when UC Vice President Van Mynen led a technical team in on December 18, 1984, to convert the remaining MIC to SEVIN (the safest way to dispose of it). Singh urged residents to evacuate the town if they could, but pledged that he personally would guarantee that these "murderers" would do no harm during this routine operation, by personally ordering the appropriate safeguards—which included shutting down all the schools and colleges, which were in the middle of examinations. He then announced that wet cloths would be draped over all the fences, a tent of wet cloths would be erected over the MIC tank, and continually sprayed with water, and, just to make sure, "Indian Air Force helicopters would hover overhead and periodically spray the plant with water." The conversion operation was perfectly safe; but in the panic, more lives and much more property were lost. In such an atmosphere, who would dare sit down at a negotiating table with Union Carbide, and presume to talk about a "fair" settlement?

On his return from India, Van Mynen led the technical approach of UC’s response to Bhopal—the effort to determine just what had happened. By mid-March the scientific team had determined that the reaction had been triggered by a large volume of water, confirmed in July when they were able to obtain core samples from the plant. By August they had determined, as above, that the only way that water could have got into the tank was by a deliberate act. They had no access to human sources of information until the Government of India sued Union Carbide for damages later that year. The court action allowed them to request the records from the factory, which the U.S. District Court (S.D.N.Y.) ordered India to make available to them in November. In December, 1985, they obtained access to the logs of the plant, and immediately noticed a pattern of change and falsification; that pattern was confirmed when they were finally, almost a year and a half after the incident, permitted access to plant employee witnesses.

Three obstacles hindered the fact-finding through interviews. First, after a year and a half, given that the plant was now closed and all employees laid off, simply finding the employees on duty that night, and persuading them to talk to the UC investigators, was a major task. Second, for those only peripherally involved in the incident, memories fade, a sense of what was really relevant dissipates, and accounts must be reconstructed slowly and patiently through the sifting of countless details. But third, those very partial accounts, the accounts given by those
only slightly involved in the incident, once reassembled, turned out to be
the most reliable sources of information, for the most centrally involved
parties had a tendency to lie. Ashok Kalekar, one of the members of the
investigating team, describes the team’s experience during the interviews:

... as the interviews with the operators and supervisors directly
involved progressed, it became apparent that there were massive
contradictions in their stories. For example, operators and employ-
ees from other units and another plant downwind of the MIC unit,
together with some MIC operators, reported sensing small MIC
leaks well before the major release occurred, and they notified their
shift supervisors. However, those Bhopal plant supervisors denied
hearing any reports about earlier leaks. In addition, the supervisors
were unable to plausibly account for their activities during the 45-
minute period prior to the release. They placed themselves with
people and in locations for reasons that were entirely different from
those that had been given by those individuals they were supposedly
with.\footnote{33}

Why the discrepancies? Apparently, to cover up the fact that several of
them, contrary to instructions, had taken their tea break together. The
other discords in the logs and in the interviews, too, can be explained all
too readily as consistent attempts to place the person giving the account
as far away from the scene as possible, or as completely ignorant as pos-
sible, as long as possible, of any trouble brewing.\footnote{34}

Early in the interview process, they found confirmation for the causal
explanation they had deduced from the core samples. An instrument
supervisor from the plant, otherwise not involved in the explosion, had
surveyed the area of the tank on the morning following the explosion,
and found that a pressure gauge had been unscrewed from the tank and
was missing. That would explain how water got into the tank. Further, a
hose normally used for cleaning was still attached to the faucet not far
from the tank, and water was still running out of it. That would explain
the source of the water.\footnote{35} Apparently further investigation uncovered the
name of the employee who had performed this senseless act of sabotage.
He had recently been, or was about to be, demoted, and he was angry.
He surely had no intention of causing that kind of explosion. His family
probably lived nearby. But he knew water would ruin the batch, and
that’s what he intended to do. Union Carbide investigators quietly turned
their information over to the local authorities. In the light of what was
occurring around them, they cannot have been surprised that those
authorities paid little attention to it.

Meanwhile, a long time had passed, and the journal readers of the
world had accepted a totally mistaken theory of the causation of the acci-
dent. Unlike UC officials, journalists had full access to anyone they could
find to talk to, and they brought their own agendas. Journalists love a
story. They want it to be exciting and they want it to be true, and if the two conflict, the exciting at least gets a shot at acceptance. Above all, they want it fast, and they settle on their conclusions quickly, for deadlines await at home. These imperatives of journalism worked against UC and the truth in the complex aftermath of Bhopal. Isolating all UC spokesmen from the Indian press ensured that unlimited speculation would rule the “background” stories. “It is remotely possible,” de Grazia pointed out (writing less than a year after the incident), “that the research facility [on the factory grounds] was being used or intended for use to test the chemical warfare potential of MIC or to develop other chemicals that would be hazardous in themselves or when compounded. Indian journalists have raised such issues, and have found a large audience receptive to the theories.”

More bothersome than these fantasies was the early acceptance, prior to exhaustive investigation, of the theory that simple worker negligence was the cause of the water entering the tank. For months, the account of the incident faulted a missing “slip blind” for the explosion. (The slip blind, a circular disc inserted in a pipe while it was being washed, was supposed to isolate the piping being washed to keep the water from leaking backwards past the valves into the tanks of chemicals.) The first report issued by UC (March 1985), for that matter, was noncommittal about the source of the water that would have been needed for that reaction to take place, and noted that the slip blind appeared to be missing.

In this period, theories jostled for news-magazine space. The amount of water necessary to trigger that reaction became a serious question, as was the timing of the entry of the water. The Indian investigating team hypothesized that only a small amount of water would be necessary to cause the reaction via a different chemical route (and therefore it could have easily been an accident), while the Union Carbide team hypothesized that 120 to 240 gallons of water must have entered the tank, and that it was a deliberate act. Additional questions arose as to the amount of time necessary for the reaction to produce the temperature necessary to corrode the steel tank and release the catalytic iron ions. If, as one Union Carbide manual had described, it took more than 23 hours, the saboteur would have to have allowed the water to enter the tank the day before (and presumably be found out). Union Carbide stated that if the large amount of water they hypothesized had entered the tank, there would have been a reaction in two hours.

At this point, journalists had every reason to accept the “accident” theory and to suspect the “sabotage” theory. An analyst who followed Union Carbide for 10 years for the First Boston Corporation, Anantha K. S. Raman, when commenting in April, 1985 on Union Carbide’s conclusion that the cause of the disaster was sabotage, said it was “a carefully orchestrated attempt to influence the upcoming legal hearings.” By August, however, when they had been able to obtain core samples, UC
realized (and proved) that the sheer amount of water needed to cause that kind of reaction could not have come from leaks from pipe-washing. (There were many other reasons to reject the slip blind or “water-washing” theory.40) But two years later, when access to plant workers for interviews had spotlighted the missing pressure gauge, and made the cause of the accident quite clear, some journalists still defended the slip blind theory. They were apparently (with Raman, above) still under the impression that UC’s legal responsibility for the accident would be lessened if it were established that the water had been introduced to the tank deliberately.41 But even after the legal issues were resolved, the battle continued, suggesting that some quantity more ephemeral, more symbolic, than money was involved. For in the Fall of 1989, after the battle was over and the settlement paid, a seminar at Bentley College, in Waltham, Massachusetts, took up the topic again. Ronald Wishart, Union Carbide’s Vice President for Public Relations, asserted in answer to a question that the company would never reveal publicly the name of the employee who had committed the sabotage. The reasons for his refusal were reasonably clear. The Indian government has forgotten, or pretends that it has forgotten, that any police report was made at the time, and will not back up any accusations UC brings now. To mention the ex-employee’s name is simply to invite more lawsuits for libel and emotional injury and heaven knows what else from the outraged accused, with his government and a claque of industry detractors to back him up, and nothing but legal expenses and more negotiated awards in the offing. Wishart expressed a firm desire not to reopen the case. Yet the controversy continued, in the seminar and beyond.42 With the legal case out of the way (despite political rumblings at the time about the new Indian government wanting to set the verdict aside and try for a higher one), the focus of the critics was clearly moral responsibility, not monetary awards.

Let us examine the possibility. Would UC’s responsibility for the accident be less if a disgruntled employee tucked a garden hose into the hole left by a removed pressure gauge, than if a careless janitor slopped water back through a pipe missing a slip-blind? There is some part of us that would say that it would: that in the case of the leak from the water-washing (involving faulty valves and the like) “the plant” was to blame primarily, and the careless worker only secondarily; that in the case of sabotage, the perpetrator of the act was to blame, and it was no more than a regrettable shame that no one caught him at it. That part of us tunes easily to the criminal law and the mens rea (“guilty mind,” or intent to do wrong) that, except in rare instances, is necessary for the existence of a “crime.” Responsibility in the criminal law thus rests on the guilty saboteur himself, and on no one else. In cases of ordinary negligence, no one is held to be “guilty” (although the negligent tortfeasor may have to pay the bill for the damages), and it is psychologically easier to blame the surrounding circumstances, in this case the factory, for whatever happened.
But from the perspective of the civil law and Union Carbide, there is no distinction between responsibility in the one case and in the other. In both cases, we have sloppy procedures (careless washing and omission of the slip blind versus no security around a tank full of dangerous chemicals), and bad personnel practices (inadequate training and supervision of the washer versus inept handling of an employee demotion), both of which are culpable deficiencies in the plant management. Besides, UC had been prompt to admit full responsibility for the disaster; it remained only to establish what the actual, real, damages were, and they would be paid in full. So why did the controversy continue?

We seem to have a case here of deflected anger—anger at the rich nations who have the money and do not share it generously with the poor, anger at all Americans who suffered no injury when the accident occurred, and finally anger at the whole system that placed the insecticide plant in Bhopal to begin with. In the next section we will widen the Bhopal inquiry to include a brief examination of the activities of multinational corporations generally in their dealings with environmentally sensitive materials. In the final section we will review what, ultimately, the Chemicals Manufacturing Association (now the American Chemistry Council) decided to do about it.

**The Varieties of Multinational Corporate Activity**

In the light of the story so far, it is tempting to conclude that as far as India is concerned, the entire affair is no more or less than an opportunity to shame the United States before the world and to extract billions in reparations to be spent as India, not Union Carbide, will choose. That conclusion reduces the whole affair to a spiteful contretemps between the two most self-righteous nations in the world, a vindictive and emotional conflict entertaining to the core. One wants to put up bleachers for the spectators.

But that reduction will not do, and not only because it leaves out the victims. The decisions that went into the planning of the enterprise, the decision to put the plant in India, the whole rational context in which the issues arose, need serious examination. Those questions fall into two categories. The first category is that of management responsibility. What are the complex moral obligations incumbent upon multinational corporations in dealing with other governments, international nongovernmental organizations (NGOs), and their own corporate offspring on foreign soil and operating according to foreign corporate cultural rules? Pursuit of this fascinating question would take us far afield of the environmental objectives of this essay. We are primarily concerned with the second category, of the environmental impact of corporate decisions. The questions raised in this
section concern the decision to manufacture large quantities of this sort of pesticide. Ironically, for these purposes, the explosion was a good thing. It brought the question to our attention and required that we address it.

The questions arising from Bhopal have to do with the existence of that plant in the first place, and our alleged reliance on “development strategies that are inherently violent, manipulative, and wasteful.”43 (They may, ultimately, be part of a larger question, on technological civilization generally, on how we can use our most modern and ingenious developments in ways that will not turn upon our fellows and destroy them,44 but that question is beyond the scope of this chapter.) It is hardly surprising that chemicals formulated to kill other species will also kill our own. Is there no other way to feed ourselves than by slaughtering all species that eat the same food we do? If we must keep insects, and rodents, at bay to ensure an adequate harvest, are there no alternatives to the use of deadly chemicals? On the plausible hypothesis that those chemicals are poisoning the soil in the long run, are they not doing more harm than good? Should we rethink our mass industrial approach to agriculture—the chemical-dependent “factory farm”—and see if we can find more environmentally friendly ways to get our food? All these questions emerge in the wake of Bhopal, calling our attention to the need to reconsider our stewardship of the land.45

For Bhopal is not alone. The pesticide industry is global big business, worth billions of dollars per year, all aimed at killing the insects, fungi, weeds, and rodents that compete with the crops for sun and water, or compete with us to eat them. Our own large-scale farms have become dependent upon them. In the Third World, pesticides are an essential part of the “green revolution” that was expected to feed the hungry of the world. In Africa alone, pesticide use quintupled between 1976 and 1986.46 When a major corporation moves into the pesticide trade in the Third World, immediate questions of influence arise: “By 1974, a decade before the Bhopal tragedy, for example, Union Carbide was marketing its products in 125 countries, 75 of which had smaller economies than the corporation.”47 Often the multinationals, of all nationalities (the United States is not alone, either), used or were suspected of using very substantial financial muscle to persuade cabinet-level officials of the developing nations to allow the establishment of chemical plants in rural areas.48

And once these plants are established, the scenario for poisoning is inevitable. Weir quotes a United Nations official who did not wish to be identified:

Even those companies that say they will maintain the same standards as in the developed world find it difficult to resist the temptation to take a shortcut. Even if they have a good design for their plant, however, there’s no good infrastructure in the underdeveloped countries. Even if they put it away from population centers, who will check and control that the people don’t come in around it?49
Jan Huismans, the United Nations Environmental Program (UNEP) official who maintains the IRPTC (International Registry of Potentially Toxic Chemicals), takes it from there:

In Africa, for example, they start with a little planning and try to locate these plants outside a populated area. But in no time, these cities grow and the industrial areas are engulfed by population settlement, surrounded by shantytowns. Also, there are no adequate waste disposal facilities for these plants. There is a lack of awareness generally about how dangerous pesticides are. There's a lack of skilled regulatory personnel and controls. There is, in sum, a whole syndrome of problems.50

It is what we have come to call the Bhopal Syndrome.

SO M E Q U E S T I O N S T O T H I S P O I N T

The Bhopal case is informative because this is an ecodisaster of the first magnitude—a tremendous environmental event, clearly caused somehow by human beings, which has caused enormous amounts of environmental damage and human suffering. How do we assign responsibility in such cases? Who is responsible, and how do we judge them? Case writers have assigned blame and responsibility; let us take some key points and sift through our reactions.

First: how do we allot responsibility for operating the Bhopal plant when nationalism insists on local control?

Second: Part of the problem is public perception. Why did Anderson go to India, and why was he arrested?

Third: The victims needed the most aid right away. Who is responsible for the delay in aid getting to the victims?

Fourth: What role was played by the media? To what extent were the media manipulated?

We may never be able to assign responsibility for the Bhopal case. There are so many issues of foreign policy and political posturing involved here that it is very difficult to assign responsibility in any clear way.

T H E I N D U S T R Y ’ S “ N E V E R A G A I N ”

Bhopal was not the first disaster to strike the chemicals industry. Following the discovery of large quantities of toxic wastes in an abandoned chemicals dump at Love Canal in Niagara Falls, a wave of unfavorable publicity had inspired the U.S. Congress to pass legislation
designed to get the dumps cleaned up and make the chemicals industry pay for it (the Comprehensive Environmental Response Compensation and Liability Act [CERCLA], commonly known as “Superfund”). In an unusual move for any trade organization, the Chemicals Manufacturers Association (CMA)\(^5\) decided to face the problem squarely and do something about it. In June, 1983, the outgoing chairman of the CMA, Bill Simeral of DuPont, presented the Association with a challenge:

In recent years we have witnessed one sensational media story after another in which our products have been depicted as direct threats to the safety of people and the environment: PCB’s, saccharine, fluorocarbons, formaldehyde—the list goes on. The problems of hazardous wastes and abandoned dumps have almost become syndicated features in many newspapers.\(^5\)

The result has been a veritable phobia in the public mind—a near universal “fear of chemicals.”

Public relations and advertising campaigns have their place, but what the public really wants is concrete action.

What should we do? To start, we can clean up the dumps. It doesn’t matter whether your company or mine has anything to do with a specific site. We are all being tarred with the same brush . . .

What the public needs to understand—and what we have to continue to remind ourselves—is that the chemical industry represents the major resource of technical capability that the country has for dealing with this problem. . . . I’m convinced that the best way to get the job done is for us, wherever feasible, to organize the cleanup ourselves and execute it ourselves. . . .\(^5\)

In the following year, the CMA took the unusual position of favoring the reauthorization of Superfund, on grounds that the project could better be completed in cooperation with the Congress than in opposition. So through 1984, Simeral’s successor, Louis Fernandez of Monsanto, testified in favor of the Superfund, and offered the services of CMA experts on technical matters before the Committee. Just as that debate was winding down, the plant in Bhopal blew up. Edward Holmer, Fernandez’s successor as president of CMA, took the position that the crisis was not UC’s alone, but affected every one of the CMA’s members. So in 1985 he assembled a committee, a special-purpose study group, and embarked on the task of a response to Bhopal. From this work, the initiative now known as Responsible Care eventually emerged.\(^5\)

The most obvious flaw in the safety provisions at Bhopal was the total lack of communication with the community. All the safety provisions, operable or not, stopped at the factory gate. No one had ever tried to make the people in the crowded town around the factory aware of what to do should an accident occur at the plant. As it was, many of the citizens of Bhopal apparently ran toward the plant when they heard all the
noise—to see what was happening. And when the injured began to turn up at hospitals, no one knew what to do for them. It seemed obvious to the CMA group that injuries could have been prevented by more attention to public warnings. Had the people in the path of the gas known even to put a wet cloth over their noses and mouths, hundreds of lives might have been saved; but no one had thought that that might be a useful thing for them to know. There had been no drills or information. Should there have been? The probability was that there would never be any need at all to know what to do in the case of a massive gas leak, and attempts to “educate” the people might just cause panic. How do you balance, the industry had wondered, the known and certain disadvantages of fearful warnings, with the unknown and unproved disadvantages of chancing a disaster without the warnings? As far as the CMA was concerned, Bhopal landed with the weight of 2,500 corpses on the side of public awareness and education.

How could the industry assure the safety of the towns in which chemical plants were located, in the face of proof that they were terribly dangerous? In 1985, the Chemical Manufacturers Association was given a draft of a set of requirements, for voluntary adoption by the membership. Called the Community Awareness and Emergency Response program (CAER), it required members to communicate with the public outside the plant—not just to answer questions truthfully, but to reach out to the community to begin the dialogue. They had to tell the public what sort of safety provisions the plant had made against various possible accidents, and above all they had to discuss with the local police and fire departments just what sorts of disasters might occur, how to cope with them, and how the chemical company might be of assistance. In a radical development, they were required to work out with local governments some means of conducting a disaster drill once a year. The essence of the program was communication: within each plant (to make sure all emergency procedures were known to all employees), with all local authorities—especially police and fire—and with the public at large, to make sure that the community was aware of the overall plan.55 The program was well-received.

Then, in mid-1985, as if to answer those who attributed the accident at Bhopal to carelessness unique to such backward places as India (“it could never happen here”), Union Carbide’s plant in Institute, West Virginia, also had a malfunction that released MIC into the air. No one was hurt, but the noise of that bell was unmistakable. This was not some foreigners’ problem: Union Carbide was a leader of the chemical manufacturing industry; the plant was owned, run, and monitored by Americans in America; and if it happened in Institute, it could happen anywhere. Evidence piled up that the public mistrusted the chemical industry, feared the chemicals and doubted the word of its representatives, and doubted its ability and willingness to keep the citizens safe.
“The public was frightened and angry, because decisions about risk regarding exposure to chemicals were being made for them without their knowledge,” observed one of the participants in the industry-to-public dialogue. “They saw decisions being made behind plant fences, in company labs, in skyscrapers. Corporations were saying, ‘These are acceptable levels of risk and the public at large wouldn’t understand the technical issues anyway.’ The industry had found itself awash in a sea of mistrust and misunderstanding.”

In this climate CERCLA was reinstituted, this time under the title of the Superfund Amendment and Reauthorization Act (SARA), appropriating $8.5 billion to renew for five years the hazardous-waste cleanup program. The funds were to come from a tax on all manufacturing companies (not just from the chemicals industry); initial estimates had the cost of a total cleanup of just the existing hazardous waste sites at $100 billion.

Included in Title III of SARA were unprecedented legal provisions for public accountability. U. S. plants had to report typical inventories of dangerous chemicals to the local communities, and work with police and fire departments to prepare plans for any spill, explosion, sabotage, or other emergency that could endanger the community’s welfare. Most significantly, Title III, which was dubbed “The Community Right-To-Know Act,” empowered localities to adopt whatever environmental regulations seemed sensible to them to protect their citizens’ health and safety, without waiting for the EPA. To the CMA’s delight, the legislators adopted whole sections of CAER for Title III, almost word for word. A few years later, Jon Holtzman of the CMA commented on this development: “It taught us that if we were willing to attack a problem that the public is interested in—where government wants success—government will cherry-pick our program and write it into law. Government will buy into our experience because they don’t want to fail either.”

In 1986, the Canadian Chemical Producers Association made some significant changes to CAER, generalizing it to encompass all activities of the chemical industry, projecting management codes for research, transportation, distribution, health and safety, manufacturing processes and disposing of hazardous wastes, as well as emergency response to accidents. (This very comprehensive program they called “Responsible Care,” the name that survives to the present.) They derived a set of “guiding principles” from these practices, a short list of imperatives that would govern the whole enterprise of manufacturing principles, and made adherence to this plan mandatory for all members of the association. There is no misreading the last sentence of the “Statement of Commitment”: “The most senior executive responsible for chemical operations in each member company of CCPA has formally accepted these principles and endorsement is a condition of membership.”

In 1987, the Executive Committee of the CMA agreed that to change public
perceptions, they would have to change their performance—radically, permanently, and visibly—and decided to import Responsible Care in its entirety. By September, the Governing Board’s decision was unanimous in favor of adopting Responsible Care as mandatory for all members. Members were required to sign a statement of principles, known as the “Guiding Principles,” and they had to agree to implement any requirements, or “Codes of Management Practice,” that the organization might develop in the future.

No guarantees were available, save that CAER seemed to work—the CEOs of many companies had bought into the idea—and the knowledge that every firm would have to participate or be forced out of the association.

What they had, in short, was trust. On the strength of the same trust, the entire membership voted to change the CMA bylaws to make Responsible Care a condition of membership. Despite lingering doubts about everything from legal liability to equity for smaller firms, the corporations making up the chemical industry in the United States had handed their trade association a mandate: to write rules to protect safety, health, and the natural environment; foster community involvement; and ensure fairness in allotment of burdens, especially where hazardous wastes were concerned. These were rules that the CEO of each company promised in advance to adopt, publicize, sell to his employees, adhere to, and be judged on—by his company, his peers in the CMA, and the public at large. On the whole, it was an extraordinary commitment for a market system.

Does Responsible Care work? Given that serious implementation could not begin until into the 1990s, it may be too early to tell. But the Responsible Care stands alone as a serious industry-wide attempt to ensure that through design of facilities and processes, provisioning of safety devices and training, monitoring of environmental effects of its operations, and sharing of information with the community, Bhopals will not happen again.

Notes

1. Chris Hedges, “A Key Figure Proves Elusive in a U.S. Suit Over Bhopal,” The New York Times (5 March 2000): p. 4. The suit was filed by one Kenneth F. McCallion in New York City, against Union Carbide and Mr. Anderson personally, alleging violations of international law and the fundamental human rights of the victims and survivors. The lawsuit further states that the defendants are liable for “fraud and civil contempt for their total failure to comply with the lawful orders of the courts of both the United States and India.” The Indian court order referred to is an indictment for “culpable homicide,” and pursuant to that indictment it has issued a warrant for Anderson’s arrest, and notified Interpol that he is a “fugitive.” The U.S. court order referred to was a decision by John Keenan, a U.S. District Court judge in Manhattan, dating from May 12, 1986, holding
that Union Carbide “shall consent to submit to the jurisdiction of the courts of India.” The company grants the legitimacy of that order, which in any case did not mention Anderson, and argues that it did exactly what the order said. It ended up paying $470 million as compensation to victims of the disaster in a 1989 settlement of a civil case brought by the Indian government. The Indian government dropped the criminal charges against Anderson at that time. That, the company claims, should take care of them, and Anderson too. “The settlement with the government of India in 1989 of all claims arising from the Bhopal tragedy did not just cover Union Carbide, it covered all directors, officers and employees, including Warren Anderson,” said Sean Clancy, spokesman at Union Carbide’s corporate headquarters in Danbury, Conn. “Based on that settlement, we see no reason to encourage any disturbance of Mr. Anderson, who retired as chairman 12 years ago.”

2. p. 19.
3. Ibid.
4. Ibid. Others have estimated the dead as high as 4000—such as Denise Lavoie, writing for the Associated Press, Hartford Courant (5 April 1992): D1, D7 (“Bhopal still haunts former Carbide chief”)—and up to 8000, such as Dan Kurzman, A Killing Wind: Inside Union Carbide and the Bhopal Catastrophe (New York: McGraw-Hill, 1987): p. 77. Kurzman has to hypothesize that the dead were hastily dumped into the river during the night to explain the lack of corpses the next day. Arthur Sharplin, Professor of Management at McNeese State University in Lake Charles, Louisiana, and author of a case study on Bhopal, estimates that 2,000 died (Center for Business Ethics, Bentley College, Waltham, MA.) The estimate of injuries ranges from 3,000 (Union Carbide: “measurable injuries after the fact,” which excludes all emotional injury and damage to property), to 20,000 (Lavoie), to 200,000 (Sharplin), to 300,000 (Kurzman). The claims of injuries later lodged with government authorities or reported to lawyers follow a similar pattern. By most estimates, there were no more that 250,000 people in Bhopal at the time (Sharplin estimates 100,000). At one point in the furor following the explosion, there were 600,000 claims for injuries. (There is no account for the discrepant figures in Sharplin’s account, which occur within two pages of each other.)

5. Many of the accounts of events within the company are taken from a talk given at Fairfield University, February 11, 1992, by Joseph Geoghan, corporate counsel for UC.


10. Ibid., p. 155.


16. Union Carbide Corporation, "Bhopal Chronology."

17. That wasn't the last we heard from the lawyers. In June, 1989, F. Lee Bailey, Stanley M. Chesley, and others filed in the same court for an order directing reimbursement of "their legitimate costs and expenses" related to Bhopal litigation, to be paid from the $470 million that India had just been awarded. They were turned down (S.D.N.Y. 1989, U.S. Dist. LEXIS 6613, decided June 14, 1989). They tried again to collect their fees in December 1993, in the same court, asking this time for "an attorney's lien against respondent, the Union Carbide Corporation." They were turned down again (S.D.N.Y. 1993 U.S. Dist. LEXIS 18227, decided December 27, 1993). Meanwhile, also in 1993, Judge Wajahat Ali Shah in Bhopal ordered further criminal proceedings, for "culpable homicide," for several UCIL officials and Warren Anderson. To the best of our knowledge, the decision of this court has not been recognized in the United States.


21. Mehta et al., "Bhopal Tragedy's Health Effects."


26. Investigations after the incident revealed a litany of collapsed systems. Weir (pp. 41-42) gives us a partial list:

Gauges measuring temperature and pressure in the various parts of the unit, including the crucial MIC storage tanks, were so notoriously unreliable that workers ignored early signs of trouble. The refrigeration unit for keeping MIC at low temperatures (and therefore less likely to undergo overheating and expansion should a contaminant enter the tank) had been shut off for some time. The gas scrubber, designed to neutralize any escaping MIC, had been shut off for maintenance. Even when it was operative, post-disaster inquiries revealed, the maximum pressure it could handle was only one-quarter that which was actually reached in the accident. The flare tower, designed to burn off MIC escaping from the scrubber, was also turned off, waiting for
replacement of a corroded piece of pipe. The tower, however, was inade-
quately designed for its task, as it was capable of handling only a quarter of
the volume of gas released. The water curtain [high-pressure spray], designed
to neutralize any remaining gas, was too short to reach the top of the flare
tower, from where the MIC was billowing.

29. UCIL’s tanks were unusually large for such an operation, which (in retro-
spect) has occasioned criticism. The UCIL tank’s capacity was 57,120 liters and
was almost full at the time of the explosion. In Germany, the United States, and
Korea, MIC tanks have a capacity of 17,500 liters and they are filled only to 50% 
30. In a (non-Indian) presentation of this view, Arthur Sharplin describes the
American exit from positions of supervision and control in the plant over the
three years from 1979 to 1982, acknowledges that the departure was demanded
by the Indian government, acknowledges that the Indian management did not
make any safety or other reports to UC, and then concludes: “It is hard to imag-
ine that such an extreme ‘hands-off’ policy could exist without strategic intent,”
the intent to mount a credible defense of nonresponsibility in the case, say, that
the plant should blow up. His account is not a parody, or at least was not appar-
ently meant to be.”
32. Ashok Kalekar, engineer and senior vice president of Arthur D. Little, reported that in some plant logs, “the pages relevant to the period in question had
been either completely, or partially, ripped out.” Richard Koenig and Laurie
Hays, “Carbide’s Contention of Bhopal Sabotage Is Supported by Arthur D.
34. Ibid.
36. Alfred de Grazia, A Cloud Over Bhopal, p. 34.
40. Ashok S. Kalekar, “Investigation of Large-Magnitude Incidents,”
pp. 14ff.
42. W. Joseph Campbell, “Corporation’s Theory About Cause of Disaster Still
43. Anwar Fazal, foreword to David Weir, The Bhopal Syndrome.
44. Alfred de Grazia, A Cloud Over Bhopal.
46. Ibid., p. 24.
47. Ibid. Cited from “Union Carbide: A Study in Corporate Power and the
Case for Union Power,” Oil, Chemical and Atomic Workers International Union,
June 1974.
51. Now the American Chemicals Association (ACA).
53. Ibid. All emphasis in original.
58. Canadian Chemical Producers Association (Ottawa), “Responsible Care.”
60. Interview with Holtzman, p. 324.
61. Rayport and Lodge, “Responsible Care,” p. 10.