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BHOPAL: VULNERABILITY, ROUTINIZATION, AND THE CHRONIC DISASTER[1]

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ON THE NIGHT OF DECEMBER 2–3, 1984, A GAS LEAK FROM A FACTORY owned by the Union Carbide Company killed thousands of people in Bhopal, India.[2] For those who survived, the disaster has during the past fourteen years metamorphosed from a sudden calamity to a chronic cancer. According to some estimates, about half a million people continue to suffer today and remain in conditions of acute vulnerability (Kumar 1993; Mukerjee 1995; Dhara 1992; Cullinan et al. 1996).[3] This unrelenting social suffering, has, however, largely receded from public attention.[4] Barring the ritualistic reports datelined Bhopal in the first week of December every year, the potent malignancy of the chronic disaster is ignored by almost everyone but the survivors. The remembered Bhopal disaster is the gas leak from a pesticide factory run by a multinational company, not the day-to-day misery of half a million survivors. A state of affairs that should seem distastefully pathological, therefore, somehow appears normal, routine, and for the most part invisible.

This paper seeks to understand the processes that have normalized the pathological and erased the enduring disaster from public notice. It explores why Bhopal has gone from being the potent political issue that it was on December 3, 1984, to a private nonissue today, the exact opposite trajectory that many other disasters have traversed (Reich 1991). It also attempts to understand the factors that have produced and exacerbated vulnerability. It asks, in particular, why the relief and rehabilitation efforts in Bhopal failed so colossally despite the presence of trained scientific and medical personnel, a bureaucracy that in recent years has responded adequately to natural disasters, and a seemingly potent and active civil society.

The paper begins by considering the safety record of the multinational

company, Union Carbide Company, its role in the creation of the accident, and the strategic politics that defined its responses at different stages. It then goes on to examine the state administration's economic and medical relief and rehabilitation efforts in the aftermath of the calamity. Finally, it explores the nature of the various civil society initiatives, including those by nongovernmental organizations, social movements, and anthropologists.

THE COMPANY

The Union Carbide Company was founded in 1898. The company entered India at the turn of the century and by 1983 had fourteen plants in the country, manufacturing an assortment of products including dry cell batteries, chemicals, and pesticides, with sales of $180 million. The company's Indian operations were conducted by its subsidiary, Union Carbide India Limited (UCIL). The parent U.S. company held 50.9 percent of UCIL's stock and exercised managerial control through its eastern division headquartered in Hong Kong (Dembo et al. 1990: 12–21).[5]

Union Carbide established its Bhopal plant in 1969 to formulate a range of pesticides and herbicides derived from carbaryl, a base chemical. The process of manufacturing this compound involves setting up a reaction between methyl isocyanate (MIC) and alpha napthol. Union Carbide initially imported these ingredients (Morehouse and Subramanian 1986: 3). In 1979, however, the company built an MIC unit within the existing Bhopal facility, which was located next to a densely populated neighborhood and a heavily used railway station. In doing so, it violated the 1975 Bhopal Development Plan, which had stipulated that hazardous industries such as the MIC plant be located in the northeast end of the city away from and downwind of the heavily congested areas. According to M. N. Buch, one of the authors of the development plan, UCIL's initial application for a municipal permit for the MIC plant was rejected. The company, however, managed to procure approval from central governmental authorities and proceeded to build the MIC unit in the midst of a dense urban settlement (CSE 1985: 216).

The risks already involved with such a siting were compounded by design and commissioning decisions the company then took. During the planning process, at least two basic issues came to the fore. One concerned the size of the proposed factory. Many in the UCIL preferred a relatively small plant adequate for the company's needs at that time, rather than something as big as the Union Carbide MIC plant in Institute, West Virginia (Dembo et al. 1990: 87). A second issue concerned the method of ingredient storage to be adopted. Again, many in the UCIL argued for a design that demanded only nominal storage of MIC determined by downstream process requirements on grounds that such a facility was inherently safer (Dembo et al. 1990: 87). The

design engineers of Union Carbide in the United States, however, insisted on large-scale storage, a less expensive process, but one that was substantially more prone to risk (Dembo et al. 1990: 87).

According to Eduardo Muñoz, a senior executive of Union Carbide who had spent a decade in India, the company made its decisions concerning size and storage for a combination of three reasons. The first of these was strategic. Building a big plant meant that the company would, by virtue of having a large capacity, attain a comparative advantage over potential competitors seeking to enter the Indian market. Secondly, company executives usually delegated decisions about design to the engineers. The latter, however, had a penchant for designing plants that were large in scale and size. Thirdly, there was very little opposition to the design in India, in sharp contrast to France, where a similar design proposed by the same company had been retracted as a result of strong public protest.[6] The net outcome was that the plant built in Bhopal was large, with MIC storage tanks of a capacity of fifteen thousand gallons each (Dembo et al. 1990: 87).

Having decided to build such a plant, the company neglected to put in place many of the safety features that were present at a similar facility in West Virginia (CSE 1985: 207–208, 215–216). This was compounded by a management culture that did not pay much attention to safety, a point that was underlined by three Carbide experts who undertook an internal investigation in May 1982 (CSE 1985: 207–208, 215–216). Largely in response to an unsafe work environment, between half to two thirds of the engineers who had been hired when the plant was commissioned had resigned by December 1984 (CSE 1985: 207–208, 215–216).

As a result of the reduction in operator strength, the company was forced to use underqualified and underpaid workers to operate highly complicated and risk-ridden technological systems (CSE 1985: 216; Chouhan et al. 1994: 23–38, 55–60). While hiring these workers to undertake specialized and hazardous jobs, Union Carbide obligated itself formally to providing them specified amounts of advanced training. In practice, however, the company reneged on this. Several workers, realizing the hazards involved in running complex plants, therefore protested, insisting that the company meet its contractual obligation to provide adequate training (Chouhan et al. 1994: 30-35). At the same time, there was also a litany of accidents, some involving fatalities (Dembo et al. 1990: 86–101; Chouhan et al. 1994: 23–42). During this period the local press carried several articles predicting an impending disaster (CSE 1985: 216). There were also a string of worker protests demanding better and safer working conditions. The company's response to the protests, however, was to use strong-arm tactics to dispel what it saw as routine labor struggle (Chouhan et al. 1994: 31–38).

Why were better safety systems not put in place by the company? A com-

prehensive answer to this question demands an ethnography of Union Carbide's corporate culture, which has, thus far, proved difficult to conduct.[7] The company's safety record, however, is public knowledge and provides some important insights. The Union Carbide Company has a long record of environmental negligence in every part of the world throughout its corporate history. Among its worst excesses are some of the most infamous environmental crimes of the twentieth century, including the Hawk's Nest tunnel incident in the 1930s (Cherniack 1986), the Oak Ridge mercury contamination problem from the 1950s (Dembo et al. 1990: 32–45), the Temik poisonings on Long Island in the 1970s (Dembo et al. 1990: 46–52), and the Kanawaha Valley pollution controversy in the 1970s and 1980s (Dembo et al. 1990: 53–68). Union Carbide Company was also implicated in several other cases of environmental respect, in countries including the United States, Puerto Rico, Indonesia, Australia, France, and India (Dembo et al. 1990; CSE 1985: 213–214). In the words of David Dembo, Ward Morehouse, and Lucinda Wykle, "Bhopal was only the worst manifestation of 'callousness toward human life.' In one tragic event after another throughout its history, its social performance has reflected a similar callousness" (Dembo et al. 1990: 132).

There is a wider context to the company's negligence. There was, in almost every case of negligence, a direct correlation between economic class and vulnerability to the risks created by the company's safety procedures (Dembo et al. 1990: 12–81). Furthermore, that vulnerability was reflected in a lack of political power among affected communities to address the dangers through institutionalized formats. In Bhopal this phenomenon was reflected in the fact that Union Carbide workers did not have the wherewithal to mobilize adequate political support to ensure better and safer work conditions in the plant (Chouhan et al. 1994: 31–38). Moreover, the company had acquired a great deal of political power locally by employing or providing illegal favors to the relatives of a number of powerful politicians and bureaucrats (CSE 1985: 216). Consequently, the state government often looked the other way when Union Carbide violated environmental regulations or cracked down on the worker protests (CSE 1985: 216).

The operational decisions taken by the plant management in Bhopal thus preyed upon the political marginality of the community surrounding the plant, putting into practice a risk regime that routinized their vulnerability. The company's behavior in the aftermath of the gas leak further elaborated upon this trend. To begin with, most people in India and abroad viewed the accident as an aberration. The *Wall Street Journal* on December 10, 1984, while expressing sorrow about the disaster, thus urged its readers to see Bhopal as a blip in an otherwise great success story of the green revolution and industrial agriculture. Such a perspective had a long genealogy. During the period in which worker agitations and local news stories drew attention

to safety problems in the Carbide plant, the state labor minister, Tara Singh Viyogi, dismissed demands for relocation, stating that the factory was "not a stone which I could lift and place elsewhere. The factory has its ties with the entire country" (CSE 1985: 216).

In the absence of strong and widespread public pressure to act in the interest of the gas victims, the Union Carbide Company had a number of options on how to react to the gas disaster. It could have responded to the great human suffering with an attempt to contribute in some meaningful way to the rehabilitation effort. The company, however, decided that its principal responsibility was to its shareholders and that the disaster it needed to react to was not that of the survivors, but the threat of financial decline (Kurtzman 1987: 193–223). It is in part this decision of Union Carbide that led to the transformation of Bhopal from an acute calamity to a chronic disaster.

There appears to be a moral economy of pain that explains the company's decision to choose the shareholder over the victim. Although some of its executives might well have empathized with the suffering of the gas victims of Bhopal, as Eduardo Muñoz seemingly did, their corporate decisions appear to have a clear economic and moral logic. According to this, there are social mechanisms to deal with suffering, along with socially constituted methods of calculation and compensation. Institutions such as courts, in this view, can be seen as markets in which the price of pain gets negotiated and formalized into a settlement package by a range of agents including company executives, victims, lawyers, activists, the media, and governments. From the company's point of view, such a system is clearly advantageous in that it helps shift discussions about retribution from absolute and individual responsibility, as in death penalty cases, to a wider societal process of calculation involving not just the corporation but a host of other actors. Once moral blame is in this sense rendered fluid and negotiable, and when the various parties agree to enter such a market, a company can move to do what it knows best—minimize risk and maximize profit for its shareholders. The issue of morality itself is taken care of by the socially sanctioned market mechanism underlying the structure of negotiations between the various agents involved.

If one examines the impact of such settlements on the victims of disasters, however, a different picture emerges. The history of Union Carbide's other disasters indicates that the price of pain, as indicated in postaccident settlements following such a process, has generally not been decided on the basis of the quantity of absolute suffering. What has mattered instead is the relative economic and political clout of the various agents involved in the market of pain. Indeed, this market has worked for the company and against the victims whenever its opponents have been poor and weak. The lower the victim is on the power gradient, the less the settlement figure has historically been (Dembo et al. 1990: 12–80).

In the Bhopal case, the market of pain was formally entered into once the various parties decided to negotiate within the legal system. This process commenced when U.S. personal injury lawyers attempted to obtain the rights of representation from individual Bhopal victims (CSE 1985: 216–218). Subsequently the Indian government filed a lawsuit, following the passage of the parentis-patria act that gave it the sole right to represent the gas victims. Once the legal process began, the Bhopal story began to unfold in exactly the same way that many of Union Carbide's other cases had. The company began to act as a rational agent, focused on regaining viability in Wall Street. It therefore put in place a systematic response strategy toward this end, enacting a series of stock purchases, bond retirements, and personnel and salary adjustments (Lepkowski 1994: 29–30). The company, furthermore, emerged with a new leadership, not only young and energetic, but psychologically distanced from the accident and its implications (Lepkowski 1994: 29–30). The net result of these divestitures and management changes was that Union Carbide became, in its own words, "a more focused company—simpler in structure, more efficient and cost-effective, and a more aggressive and determined competitor" (Lepkowski 1994: 29).[8]

The restructuring of Union Carbide, however, had a clear impact on the gas victims. By all external criteria, UCC and its managers benefited from the Bhopal incident, as did UCIL. They had justification to close a burdensome plant, make aggressive moves to restructure both companies, and enhance management benefits. The irony was that a disaster such as Bhopal left its victims devastated but corporate stakeholders better off (Lepkowski 1994: 29–30).

The company's legal strategy was designed to complement its economic recovery plans. The framework of the approach was clear by the time Union Carbide officers met their shareholders in the spring of 1985. The company would reject any responsibility for the accident, implicitly attributing any technical and managerial problems at the Bhopal plant to its Indian affiliate. It would maneuver to have the trial shifted to India from the United States and, when that happened, aim for an early and inexpensive settlement. To this end, it hired a fleet of top corporate lawyers in addition to some of India's best attorneys. Moreover, a special unit was assigned the full-time job of overseeing Carbide's corporate and public relations strategies (Lepkowski 1994: 28).

Thus began a process of systematic erasure and denial, following a pattern Union Carbide had set in responding to other accidents in the United States and elsewhere (Dembo et al. 1990: 46–52). The company would first of all deny any responsibility for the accident. The strategy of denial soon evolved into a claim of employee sabotage, a claim so vacuous that it was subsequently abandoned (Chouhan et al. 1994: 61–70). It must be noted,

however, that the company continues to this date to invoke the sabotage theory as the explanation of the accident in its dealings with the media and the public in the United States and elsewhere.

As a second aspect of its campaign of erasure, Union Carbide began to put the accident "in perspective" and blame the victim. As the Union Carbide works manager told the media barely fifteen days after the accident, "MIC is only an irritant, it is not fatal. . . . We don't know of any fatalities either in our plant or in other Carbide plants due to MIC" (CSE 1985: 206). The company subsequently claimed that the large mortality was due to a combination of undernourishment and a lack of education among the people affected. It also claimed that the persistent morbidity had to do with baseline diseases such as tuberculosis in the gas-affected areas and that the victims afflicted their plight on themselves by maintaining poor standards of public hygiene. Union Carbide also downplayed the potency of the gas in the media and in courts. Moreover, it sponsored research and data-gathering on the toxicological impact of the gas on the physiology of the Bhopal survivors, to counter the data of state hospitals and other NGO clinics.[9]

Union Carbide's third tactic of erasure was to divide public opinion by effective image management. It hired public relations companies, including Burson-Marsteller (B-M), the largest independent public relations company in the world and one with an impeccable track record for handling companies involved with disasters over the last forty years (Greenpeace 1992). This Washington-based giant with offices in more than ten countries was the company picked by Babcock and Wilcox in the aftermath of the Three Mile Island nuclear accident. It was also the company that had assisted A. H. Robins in its problems with the Dalkon Shield contraceptive device, Eli Lilly with the controversy over Prozac, and Exxon after the *Exxon-Valdez* oil spill, among many other such examples. It has, furthermore, been called upon by governments needing "issues management," such as the regime of Nicolae Ceausescu and the generals of Argentina (Greenpeace 1992; B-M internet website, http://www.bm.com).

With the help of agencies like B-M, Union Carbide launched a massive media campaign denying liability and blaming a host of others, ranging from workers to the Indian government and the gas victims themselves. It also managed to mobilize the U.S. media in this effort. The program *60 Minutes* in 1988, for example, portrayed Union Carbide as a victim of Indian politics (Lepkowski 1994: 37). Today, Union Carbide's internet site portrays the company as an epitome of the responsible corporate citizen while making almost no reference to either Bhopal or India (http://www.unioncarbide.com).

Union Carbide also employed political campaigning as part of its recovery strategy. When lingering criminal and civil cases continued to attract support from environmental, labor, and consumer movements internationally,

Union Carbide hired several prominent politicians to mitigate the political impact of these initiatives and to lobby the Indian government to settle without a protracted legal case. An important argument given in favor of a quick settlement was that it would send strong signals to the international corporate community that India offered a favorable business environment.

Union Carbide's post-disaster strategy paid off in February 1989. Against the spirit of an earlier attempt to settle the Bhopal case out of court, and without any consultation with victims or their representatives, the government of India offered a settlement package to Union Carbide. The terms totally favored the latter. In the aftermath of the accident, victims' organizations in Bhopal registered an injury claim of U.S.$10 billion, based on standards in the United States. The Indian government meanwhile claimed $3.3 billion. Union Carbide's initial offer was $300–$350 million, and the final settlement was $470 million. The ultimate cost to Union Carbide came to a mere 43 cents a share. In its annual report following the settlement, Union Carbide boasted: "The year 1988 was the best in the seventy-one-year history of Union Carbide, with a record $4.88 earnings per share which included the year-end charge of 43 cents a share related to the resolution of the Bhopal litigation" (Union Carbide Annual Report, 1988). The parent company then proceeded to sell its entire 50.9 percent shares in UCIL to the Calcutta-based McLeod Russell India Ltd., clearing the way for it to exit India without any further involvement with Bhopal (Chouhan et al. 1994: 174).

It has been argued by a number of scholars that the Union Carbide Company could have acted differently in responding to the Bhopal gas disaster. As Wil Lepkowski put it, "To Carbide, the settlement was a closure that allowed it to walk away from India, to evade the fuller atonement that moral responsibility implies. Bhopal could have been an opportunity for Union Carbide to display legal and moral innovation: a disaster one company decided not to back out on. Instead, it negotiated not a commitment to continuing stewardship at Bhopal, but an uncreative, even antiquarian, way of notarizing its moral responsibility for what was (and is) a unique ongoing tragedy" (Lepkowski 1994: 37).

Yet, the story of Union Carbide in Bhopal is not just a case of a multinational company gone wild. As argued earlier, there appears to be a deep structural logic to each of its actions, and this logic is embedded in a very specific culture that defines the social role of a corporation. A very good example of what this culture entails is in a paper by Harold Burson, chairman of Burson-Marsteller, in which he argues that: "being the professional corporate conscience is not part of the job description of other executives. It is part of the job description of the chief public relations officer" (Burson n.d.). Burson goes on to add that: "A corporation cannot compensate for its inadequacies with good deeds. Its first responsibility is to manage its own affairs profitably," and that:

"We should no more expect a corporation to adopt a leadership role in changing the direction of society than we should expect an automobile to fly. The corporation was simply not designed for that role" (Burson n.d.). Moreover, as Lepkowski points out, "There is a form of dishonesty, or perhaps more properly structural self-deception, built into the process of corporate reparation in a industrial disaster. Such a posture . . . may be unavoidable because liability is always just around the corner in any chemical operation. But it exists nonetheless, supported by two kinds of institutional pressure . . . the need to put the best face forward to shareholders . . . (and) the unavoidably litigation resisting character of the modern U.S. corporation which translates into the position 'we can make no mistakes that can be admitted to'" (Lepkowski 1994: 37).

Union Carbide thus acted according to established cultural practice of absolving itself by participating in the market of suffering. The fact that it could do so, that such a culture is in place to begin with, has to do with issues beyond just the company. It has to do with, among other things, the wider politics of corporate power in contemporary society, the weakness of citizens groups and governments, the global green-washing industry, and the politics of forgetting that the market of suffering engenders. The impact of all this on Bhopal, however, as had happened several times before in Carbide's history in the United States, was that the issue of the disaster was publicly closed in terms that favored the company and its shareholders. For the gas victims, though, it resulted in the perpetration of the chronic disaster.

THE REHABILITATION BUREAUCRACY

While corporate politics and the wider social structures in which they were embedded were important determinants in the production of vulnerability in Bhopal, they do not in themselves explain the chronic disaster. To understand why more than half a million people continue to suffer without any sign of hope, one must also systematically examine the governmental relief and rehabilitation effort in the aftermath.

One of the first issues such an examination reveals is the lack of capacity within the government to deal with a disaster such as Bhopal. To begin with, no obvious contingency planning existed to cope with an event such as a gas leak. There was no systematic governmental operation to evacuate people (CSE 1985: 209). On the contrary, it took no less than forty hours for the government to arrange the first coordination meeting of secretaries and heads of departments (CSE 1985: 218). The government also failed to ensure basic public health. Among other things, carcasses of dead animals were not disposed of effectively for up to three weeks after the gas leak, bringing a well-founded fear of a mass epidemic (CSE 1985: 218).

The government also failed to mitigate panic and communicate effectively with the people. On the night of the disaster, there was no attempt to inform the populace, either through the radio or other means, on how to react to the gas or what precisely to do. In the days that followed, the state radio began proclaiming normalcy instead of providing accurate information (CSE 1985: 218–220). In a context in which most people were acutely concerned about the air, the water, and the food they consumed, this led to a rapid loss of faith in the credibility of governmental information, creating an atmosphere in which rumors flourished and panic took root.

The governmental lack of capacity is, however, perhaps best illustrated by its inability to innovate while designing relief and rehabilitation programs. In the immediate aftermath, the government announced ex-gratia payments to the victims' families to help get them through the immediate crisis. It also arranged for the distribution of clothes, food, blankets, and other material goods. Such measures typify the established response to natural disasters in India. A few months after the accident, though, it became clear that standard governmental disaster management efforts were not going to suffice in Bhopal. Unlike floods or cyclones, which, although they are catastrophic events, are, however, amenable to stabilization and the restoration of normality by consolidated and rehearsed state intervention, the disaster in Bhopal refused to go away. It lingered beyond the first week and month and manifested itself in several persistent ways. Unlike floods or cyclones, the Bhopal survivors were permanently injured physically. This meant a crisis for the city's medical infrastructure, which was simply not designed for such large-scale morbidity. Furthermore, the continuing calamity posed a problem which the Indian bureaucracy's disaster management paradigm had never had to face on this scale before: to devise an economic rehabilitation strategy that was ergonomically viable and economically feasible. In short, the onset of the chronic disaster was a test of the government's ability to innovate.

The bureaucracy responded about eleven months after the disaster with a long-term strategy. Central to this was a program of economic rehabilitation. There were three broad aspects to the plan. Firstly, the government would attempt to attract firms to the Bhopal area and thereby create more jobs for the gas-affected. Secondly, it would set up production centers with the view of employing the victims in industries like garment-making, with the export market in mind. Thirdly, it would attempt to adapt for Bhopal a version of a stock governmental poverty alleviation scheme, the Special Training and Employment Program for the Urban Poor (STEP-UP), itself a derivative of the Integrated Rural Development Program (IRDP), the standard governmental poverty elimination scheme for rural areas. The STEP-UP program envisaged

small loans for individuals to help them start businesses in either the retail or service sectors. The government would serve as a guarantor and a provider of training in skills, where needed (GMP 1985a; GMP 1985b).

These programs were, however, launched without without any realistic appraisal of what it took to attract capital, absorb labor in the production process, or market products. As a result, the economic program unraveled slowly but surely. The attempt at attracting firms failed right at the outset. The production facilities, too, quickly ran into trouble. Clearly, the government had overestimated, or had been plainly optimistic about, the market viability of these centers, a point that was soon driven home to the agencies that ran these facilities (Rajan 1988: 10). The STEP-UP program, too, failed for a set of related reasons. To put it simply, the local economy was not geared for this new spate of economic activity. To begin with, IRDP and STEP-UP schemes were not designed to be effective in contexts such as Bhopal, where there was an enormous number of claimants concentrated in a small geographical area. In a context where there was little or no buying power because livelihoods had been debilitated by the disaster, and with little other industrial or economic activity in the city and in its immediate hinterland, the small retail units and other businesses began to collapse and close down one after the other.

There were other reasons for the failure of the STEP-UP program. Foremost among these were the divisions between the rehabilitation bureaucracy and the gas victims engendered by economic and social class differences between these two communities. One illustration of the consequence of these divisions is the behavior of many bank officers. Already biased against poor people, they began to perceive the gas victims and the sheer volume of loan applications they had to process as needless and rewardless work inflicted upon them by the whims of bureaucrats and politicians. Among other things, bad debt recovery would mean a slow track for their own career trajectories. As one bank manager argued, "Tell me, whose disaster is this, theirs [the gas victims] or mine? I have enough work to do as it is. All these ignorant people keep pestering me without satisfying the procedures. If I am to attend to each of their queries, I shall be inviting a disaster" (Rajan 1988: 16).

Another reason for the failure of the STEP-UP program was corruption. An informal market sprung up around the entire relief apparatus, which extracted large chunks of what little the gas victims received. A complex governmental form combined with an illiterate gas victim, for example, created space for an unofficial scribe who charged fifty rupees as service charges to fill out an application (Rajan 1988: 17-18). A frustrated protest followed by an arrest could mean several hundred rupees to local policemen. Multiple

stages in the loan application process, with the accompanying hassle of document procurement, form filling, and lost time, could be reduced to a relatively bearable process by a cash payment at existing market rates. At another level, infrastructure projects aimed at public health or slum improvement offered a vast opportunity for a wide range of agents to make money. The rehabilitation bureaucracy around the disaster actually proved to be one of the greatest sites of institutional innovation, as middlemen systematically identified and occupied a variety of service niches. Indeed, the disaster created an ecology of opportunity for lower-middle-class entrepreneurs unaffected by the gas leak, petty bureaucrats, politicians, and, in some cases, even unscrupulous NGOs. The problem, however, was that these economies were built largely at the expense of the victims.

These occurrences bear an important parallel. If one contrasts rehabilitation in Bhopal with most governmental poverty alleviation programs across India, the events following the disaster do not appear pathological but quite normal. The governmental rehabilitation program in Bhopal, in effect, ended up creating a poverty alleviation bureaucracy, with all its attendant problems of inefficiency and apathy. In doing so, the rehabilitation effort inadvertently ended up routinizing the disaster. The chronic disaster mirrored the wider and equally reprehensible phenomenon of chronic poverty elsewhere in the country. Bhopal thus was just a microcosm, reflecting the larger macrocosmic reality of the failure of the government as an agent of poverty eradication.

THE CULTURE OF MEDICAL PRACTICE AND RESEARCH

There are some important continuities between the medical and economic rehabilitation programs. One of these was in the politics of class, as was manifest in the day-to-day interactions between the relief administration and the gas victims. To the doctor and hospital staff, the gas victim was an illiterate, working-class laborer, a double negative for a class-conscious mindset. Equally important, by being recalcitrant in refusing to respond to treatment, the victim was being a perpetual burden.

The failure of the medical rehabilitation program, however, lay also in a host of other factors. Among them was a particular form of scientific hubris, one that favored certain types of evidence over others. Women's gynecological problems, for example, were systematically denied and repeatedly attributed as "faking," "psychological," or "due to poverty and poor hygiene" (Sathyamala 1988: 50). Again, men's problems were attributed to "compensation neurosis" or to wider social factors, such as baseline diseases. Underlying this language was a cultural prejudice that privileged one form of knowing over another. Subjective testimonies did not count.

Related to this was the prevalent culture of resolving scientific controver-

sies. The classic illustration of this was the infamous "thyiocyanate controversy," which arose around the question of how to interpret the results of the autopsies of hundreds of bodies in the aftermath of the gas leak. To forensic pathologists such as Professor Heeresh Chandra, the person in charge of the autopsies, there were unmistakable signs of cyanide poisoning. This diagnosis led them to a policy prescription of detoxification, which meant the administration, through series of injections, of sodium thiosulphate, a known antidote for cyanide. The theory argued that the cyanide radicals would in time be eliminated through urine and that the victims would slowly attain normality. This theory was seemingly supported by laboratory studies (Sathyamala 1988: 41–44).

The enlarged cynogen-pool theory was, however, opposed by a powerful local figure, Professor N. P. Misra, the dean of the Gandhi Medical College. He argued that his own examinations of gas victims indicated that the gas had affected only the lungs, causing fibrosis with the resultant hypoxia, a postulation that was later titled the "lung fibrosis theory." He argued further that there was no evidence in the medical literature of the phenomenon of "chronic cyanide poisoning" (Sathyamala 1988: 41–43). The cynogen-pool and fibrosis theories, therefore, began to be fiercely contested by Professors Misra and Chandra, respectively the dean of the medical college and the head of forensic pathology. At stake were not only the personal egos of these two men but also the institutionalized rivalries between the two fields they represented—those of clinical medicine and pathology (Sathyamala 1988: 43). One of Misra's main arguments against the NaTs therapy was that the existing record of NaTs showed that "while 60 percent of the cases showed subjective improvement," none showed "objective improvement," as opposed to his own treatment using bronchodialators, which, he argued, showed "objective evidence of reduced airway resistance" (Sathyamala 1988: 43–44). As Medico Friends Circle and other NGO medical teams repeatedly pointed out, "there was no reason why the two theories could not go hand in hand, why there could not be systematically coordinated treatment procedures that adopted a plurality of measures with systematic record keeping that would eventually lead to closure. But the power and the egos of the individuals and the unwillingness of the ICMR to interfere, prevented this from happening" (Sathyamala 1988: 54). The inability of the ICMR to intervene effectively during the thyiocyanate controversy raises yet another issue, of a wider failure of India's premier medical body. In particular, what was missing was a coordinated procedure to translate the vast amounts of medical research that was conducted and published in leading medical journals into policy guidelines on the ground level.

Like the economic rehabilitation program, the medical response was plagued by class and gender biases that prevented effective treatment. In addi-

tion, here, too, there was a total absence of both contingency planning and the ability to mount an effective response system. Also missing was a pragmatic scientific culture that would effectively channel research energy into result-oriented ends aimed at treatment. The result was a medical rehabilitation program that could do little to prevent the transformation of the disaster from the acute to the chronic.

THE ACTIVISTS

Given the complexity of the issues involved in the disaster, civil society responses in the aftermath required enormous tact, intelligence, and, most importantly, strategic sensibilities that recognized the politics of Union Carbide as well as the limitations and opportunities open in the rehabilitation bureaucracy.

The Bhopal gas disaster spawned a wide diversity of activist initiatives (Rajan 1988: 24–36). The most visible of the activist initiatives during the first two years after the gas leak was that of the Zahreeli Gas Khand Sangharsh Morcha (Poisonous Gas-Event Struggle Front). The Morcha saw itself primarily as a political movement. Judged by the backgrounds of its members, the Morcha was extremely heterogeneous. The rank and file included many motivated gas victims, as well as dedicated volunteers from smaller towns in Madhya Pradesh state. It also included middle-class activists from cities such as Delhi, Bombay, and Calcutta, mainly student environmentalists, feminists, and public health activists.

Despite its diversity, the Morcha cohered around a common approach borne out of a revolutionary, as opposed to a reformist, mode of politics. Underlying this perspective was a basic understanding. Disasters like Bhopal, tragic as they are, had revolutionary potential. They could help shatter the faith the masses had in the institutions of the state. Hence, an organization with truly revolutionary consciousness had to use the disaster to expose the Indian state and particularly its class composition, interests, priorities, and its collusion with multinational capitalist interests. In doing so, it could build among the common people a class consciousness that would in time create the objective conditions for a revolution.

With this approach, the Morcha devised a four-pronged strategy. It would mobilize the gas victims over issues that exposed the failure of the government to provide for them. It would create alternative data to counter what it saw as governmental and company attempts at erasure. It would present "people's plans" as alternatives to the governmental programs where appropriate. Finally, it would establish a network of organizations to debate and act on the "larger issues" raised by Bhopal (Rajan 1988: 27).

For more than a year and a half the Morcha succeeded in at least three of

these four aims. It mobilized the gas-affected people; used such events to "educate" the people about their class identity; kept Bhopal in the news and exposed efforts at erasure by both the company and the government; and conducted socioeconomic surveys of sections of the affected population and collaborated with the Medico Friends Circle in conducting a medical survey. In addition, the Morcha started a People's Health Clinic and collected data on the effectiveness of sodium thiosulphate, information used to file a case against the government in the Indian Supreme Court. The case resulted in the appointment of a Supreme Court Committee on alternative medical relief, with representatives from governmental agencies and the NGO community (Rajan 1988: 26–28). The Morcha also succeeded in contributing to the national and, to a degree, international debate on the wider issues raised by the disaster.

The Morcha, however, floundered in certain crucial areas. Perhaps the most important of these was its failure systematically to address the issue of rehabilitation and the wider problem of growing social and economic vulnerability. In focusing on demonstrating governmental erasure, it blinded itself to the fact that the state government did in fact have a rehabilitation program, however badly designed. Given that denial was its starting point, constructive engagement and viable alternatives were never really part of its agenda.

Perhaps the most important reason for the Morcha's failure to tackle the issue of vulnerability, however, was the extremely doctrinal and inflexible ideology that framed its activism. Missing was a sense of pragmatism, a willingness to explore the gray areas between revolution and reform. Underlying such an attitude was an inability to see social suffering as a political category unto itself, as opposed to a mere manifestation of wider structural issues, such as the class composition of the state or the rapaciousness of multinational companies. There was arguably scope for a more constructive engagement with the state, an engagement that could have been part of a pragmatic strategy that did not necessarily mean reneging on its wider understanding. For all the corruption and apathy at the lower levels of the governmental bureaucracy, many in the state administration were genuinely concerned about the failure of their programs.

Moreover, with its connections to the Indian and, in some cases, foreign intelligentsia, the Morcha had the opportunity to commission research that could have helped provide alternatives to the governmental program, creatively politicize the question of vulnerability, and thereby help it remain a potent public issue. Had the Morcha seen vulnerability as an intrinsic political problem, it might have felt compelled to act in this manner, and this in turn might have changed the landscape of the chronic disaster. A political strategy based on pressing for the implementation of such alternatives might have given the Morcha itself a new lease on life and the basis for further mobilization. As it turned out, the Morcha declined in influence and was for

all practical purposes extinct within two years of its formation.

With the Morcha's decline, another grassroots movement began to emerge, one that has endured to this day. It was different from the Morcha in that it was comprised entirely of the gas-affected people. Equally important, 85 percent of its members were women. It was therefore called the Bhopal Gas Peedith Mahila Udyog Sanghatan (the Bhopal Gas-Affected Women's Trade Union—BGPMUS). The BGPMUS grew out of the shop floor and the house floor where women manufactured commodities for sale for businesses set up under STEP-UP and other schemes, not all of which were related to the official rehabilitation program.

Much of the BGPMUS's activities have concentrated on material tangibles directly targeted at mitigating the members' collective vulnerability. For example, when the state government closed down a sewing center, one of its rehabilitation projects, the BGPMUS agitated until the government reconsidered and reopened the facility in June 1987, thereby providing twenty-three hundred jobs. Again, in the aftermath of the out-of-court settlement in 1989, more than five thousand women took the train to protest outside the Supreme Court in Delhi. This agitation eventually led to the filing of a review petition by the BGPMUS, with handwritten testimonies from thousands of gas-affected women (Basu 1994a, 1994b). The BGPMUS has engaged in many similar activities over the past decade.

Unfortunately, however, the BGPMUS has, with a few notable exceptions, not been supported by the wider Indian community in attempting to find lasting ways of mitigating the chronic disaster. While there has been some logistical support, helping it file court cases and helping arrange events such as the demonstrations outside the court in Delhi, this has failed to help address the fundamental concern that has sustained all of the BGPMUS's activities—effective rehabilitation. One is left wondering how different Bhopal might be today if the strength and the tenacity of the organized women had been matched by a technical ingenuity and commitment on the part of the rest of Indian society, especially its various institutions of science and social science, to suggest how a working rehabilitation program could be practically erected.

CONCLUSION: BHOPAL AND ANTHROPOLOGY

Herein lies a final moral of this story: the failure of Indian social scientists to articulate and put in practice a vision of rehabilitation. Since this is a book on the anthropology of disasters, let us examine what anthropologists did in response to Bhopal.

It must be noted, first of all, that there were very few anthropologists present in Bhopal. Those who did write on Bhopal basically presented a critique of the modern state and modern science. One of these interventions, by Veena

Das, concludes by making a point that is particularly relevant here. Das writes that the Bhopal case "has enough residues to create . . . a new understanding of suffering," the most important of which is taking "direct responsibility" (V. Das 1995). Das's analysis is, however, directed at what she calls the "existing theodicies of the state." By this she means the languages and methods by which agencies such as the bureaucracy, organized medicine, and the legal profession produce discourses on the meaning of suffering that "legitimize the producer of the discourse rather than the victim" (Das 1995).

What Das and her colleagues (e.g., Visvanathan 1988) fail to do is to extend this analysis inward to their own discipline and vocation. Anthropologists like Das and Visvanathan were active presences on the Bhopal scene. They were not only modest witnesses, keeping Bhopal alive on university campuses, but crucial allies for activists, intervening on their behalf and traveling to Bhopal on occasion to help release them from jail. Such acts, important as they were, represented only the efforts of concerned citizens acting out of a sense of moral duty. The extent to which they drew upon anthropology as a discipline was in helping articulate a critique of statist techniques and development policy, which was by no means an unimportant thing to do. They and the discipline were, however, silent on the tangibles that mattered for the people of Bhopal. With all good intentions, all they could do was create a new theodicy of suffering, one that was empathetic to the victim's plight but which was, nevertheless, as externalizing as that of the state or indeed the activist.

What anthropology failed to do, like the scientists, doctors, lawyers, and bureaucrats it accused, was to embrace direct responsibility and address the day-to-day issues that exacerbated vulnerability and sustained the chronic disaster. Ultimately, there is nothing that anthropology could offer to a theory of recovery or rehabilitation. What is striking is that no anthropologist did fieldwork in Bhopal that attempted to make a material difference in people's lives by exploring how a meaningful rehabilitation program could be established. What is equally striking is that such a research program was not even conceived. When one juxtaposes this with the failure of the rest of the social sciences, such as the failure of the Tata Institute of Social Sciences to complete a survey, or the lack of response by other social science institutions to the state government's initial call to formulate a rehabilitation strategy (Rajan 1988), one begins to see some more reasons for the persistence of erasure and vulnerability. Like the bureaucracy and the scientific and medical communities, social scientists, including anthropologists, lacked both the capacity and the paradigms to effect an adequate response.

Part of the reason anthropology could not provide an alternative was that it operated with big and awkward categories, such as "the state," "science," and "civil society." It failed to disaggregate these entities into something that could then be reassembled with problem solving as the objective. Crucially, it

persisted with an epistemological position of "the other," commenting and criticizing but refusing to get its hands dirty. Anthropologists in Bhopal could well have attempted to intervene in the bureaucracy, pointing to the lack of adequate accountability structures, class biases, gender biases, and the absence of institutionalized methods of response. They could well have suggested alternative institutional arrangements that were socially sensitive. They could also have helped break the unconstructive and uncooperative relationship between the state bureaucracy and the various voluntary activist groups attempting to assist the victims. In doing all this they could well have invoked a notion of expertise to push the bureaucracy to listen and change. This idea of expertise, based on various recent historical studies of science and society (see, e.g., Jasanoff 1995), could have been reflective and sensitive without the hubris of the omniscient, and yet very potent.

All this, however, required a commitment to problematization with the view toward problem solving, rather than one of pure description alone. Ultimately, anthropology as art failed to transform itself into anthropology as science, with a wider notion of social experimentation. While anthropologists were willing to criticize institutions such as the bureaucracy for a lack of an ethnographic imagination, their own ethnography had a very limited political imagination and was in the end insufficient to prevent the disaster from metamorphosing from the acute to the chronic.

In the decade and a half after Bhopal, however, the political landscape has changed drastically. The power of corporations is rising at the expense of citizens, as the environmental and social causes in the various trade arrangements and proposals, such as the Multilateral Agreement on Investment, testify (Barlow and Clarke 1998; Grossman and Adams 1993; Valliantos and Durbin 1998). At the same time, the capacity of nation-states to deal with disasters such as Bhopal is decreasing. Besides, social movements, while being successful on specific issues and places, largely lack an alternative global vision. In this environment, anthropology has new challenges and opportunities. Understanding corporate cultures, for example, needs a major ethnographic effort. Again, anthropologists are well positioned to help create capacity in governments and bureaucracies, especially by building into these institutions an ethnographic imagination that will eventually help make them more sensitive and accountable. To what extent the discipline is able to embrace these challenges might well decide the fate of the Bhopals to come.

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2. The exact number of deaths remains a disputed figure, though most sources point to a total in excess of two thousand.

3. The term "vulnerability" is used here in the way it has been in Blaikie et al. 1994, and refers to the diminished capacity of the Bhopal victims to "cope with, resist and recover from."

4. The term "social suffering" is used here in the sense it has been used in Kleinman et al. 1997.

5. Unless otherwise specified, "Union Carbide," "Union Carbide Company," and "Carbide" in this paper refer to both the U.S. parent company and the Indian subsidiary.

6. "Setting the Record Straight: A Conversation with Edward A. Muñoz, former Managing Director, Union Carbide, India." Interviewed by Joshua Karliner, Ebb-Tides.

7. A good example of this are the efforts of Wil Lepkowski (Lepkowski 1994).

8. At the end of its battle with the GAF corporation, Union Carbide had been able to divest itself of enough assets to file a bankruptcy claim under U.S. laws. GAF, however, made U.S.$81 million even though the takeover failed. The only losers were the victims (Chouhan et al. 1994: 122).

9. See several issues of *Bhopal,* the bulletin of the Bhopal Group for Information and Action, in 1986.

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