

Introduction: Bhopal and After

Tomás Mac Sheoin and Frank Pearce*

Three Disasters at Bhopal

WITH THE ARRIVAL OF THE 30TH ANNIVERSARY OF THE CATASTROPHIC DECEMBER 1984 gas release from the Union Carbide (UC) pesticides factory in Bhopal, India, what idea or image comes to mind? Is it the sight of the dead and dying in the narrow streets of the old city, machines removing dead animals, the piles of corpses draped in white sheets awaiting cremation, or Raghu Rai's iconic photograph of a half-buried child's face? Or do we think more abstractly of Bhopal as exemplifying the failure of national and transnational legal and regulatory systems to prevent chemical catastrophes and, when they do occur, to hold the authors of these crimes publicly accountable? Bhopal can also be viewed as a failure of the medical profession to identify and deal with the chronic consequences on the health of those exposed to the released toxic gases, and therefore another failure of Western medical research and practice to pay attention to environmental and occupational causes of ill-health. Or do we recall the resolute and inspiring struggle of the survivors and their supporters for relief and justice, epitomized by the 800-kilometer-long march on foot from Bhopal to Delhi or the symbolic sweeping of dirt off the steps of the Indian Supreme Court after the 1989 settlement?

Bhopal elicits all of these visions because it is, in fact, three disasters, the first being the toxic gas leak, the second being the disastrous response to the leak due to failures by the Indian state and the responsible corporation, with the third being the ongoing water contamination from waste dumped by the factory during its operations and the chemicals abandoned at the factory.¹ The first disaster was acute, while the other two were chronic and resulted in major ways from failings of the state and the national and international medical, legal, and regulatory systems.

Struggle over the Definition of Bhopal

From the beginning, Bhopal involved a struggle over definition and an attempt to limit a crisis that affected not only the state and capital, but also spread through many specialized subsystems of the social system, especially knowledge systems. Thus, Bhopal represented a crisis, for example, both for the chemical industry and

* TOMÁS MAC SHEOIN and FRANK PEARCE are the guest editors of this issue of *Social Justice*. An independent scholar living in Ireland, Thomás Mac Sheoin (email: tmacsheoin@gmail.com) writes on the chemical industry and social movements. Dr. Pearce is Professor, Department of Sociology, Queen's University, Kingston, Ontario, Canada (email: pearcef@queensu.ca).

for the disciplines/knowledge systems of chemical engineering and industrial safety, while also representing a challenge to the medical and legal profession (especially the international or global systems). The struggle over Bhopal continues to be a struggle over control and definition, with resistance against the corporation now centered in Internet “image wars” and that against the state involving contention over memorializing the massacre. So the struggle is over the idea of Bhopal, with each protagonist advancing a definition and attempting to obtain hegemony by achieving the status of the common-sense definition or account of the disaster, its causes, consequences, and meaning.

Medical

One dimension of the struggle was over the health effects of the gas leak. Reich (1994, 186) observes that “as in other chemical disasters, the definition of the disease and its symptoms became a symbolic battlefield, with sometimes-violent outbursts, in the conflict over redress for Bhopal gas victims.” UC and its supporters claimed that MIC (methyl isocyanate, the major constituent of the gas plume) would only affect the eyes and the lungs, while others claimed it affected many bodily systems. The battle, while symbolic, was also material: as Jones (1987) points out, the desire to limit the effects of the gas was an attempt to limit liability. Whether the effects were chronic or acute had obvious implications for the extent of liability, as did intergenerational and genetic effects. The greater the quantum of suffering caused, the greater the quantum of compensation that can be extracted—or at least demanded—from the perpetrator. UC had a major interest in minimizing the health effects of their gas leak. Assisting in this activity were doctors who were influential in the local professional hierarchy and advisers to the state government (Singh 2008).

The politicization of medical treatment resulted from a suggestion from UC that sodium thiosulphate be administered to those affected, a suggestion later retracted when its implications were realized: “acceptance of sodium thiosulphate as a rational treatment meant that the state recognized that the victims were suffering from chronic cyanide poisoning and that the gases had crossed the lung-blood barrier to produce multi-systemic effects” (Sathyamala 2008, 17). When the state banned sodium thiosulphate, activists and nongovernmental organizations (NGOs) continued to administer it, resulting in police raids on an NGO clinic, arrests, and the filing of attempted murder charges, while “the Madhya Pradesh government declared that all ‘outsiders’ working with the gas victims would be treated as ‘terrorists’” (ibid.). Thus, the state attempted to control treatment of, and research on, the health effects of the gases.

The initial politicization of the health effects of the gas leak and its treatment led to the medical appropriation of the gas disaster by Indian state agencies: “Government research units such as the Indian Council of Medical Research (ICMR), the Defence Research Development Establishment, the Industrial Toxicology Research Centre and others were given an exclusive right to conduct epidemiological surveys and

toxicological research and to suggest possible lines of treatment.... As a result, the medical aspect of the disaster was gradually, almost deliberately, shrouded in secrecy. All information was made confidential under the Official Secrets Act” (Sathyamala and Jaising 1993, 91). A review of the health status of survivors in 1990 noted that the only epidemiological surveys available had been produced by NGOs (Narayan 1990, 1905).

Further aggravating the health situation of the survivors was the fact that UC treated its toxicological research on MIC as trade secrets, as intellectual property it did not wish to divulge. UC toxicologists did not make a continuous effort to investigate MIC’s long-term effects, as noted by the most consistent and even-handed reporter on Bhopal, Wil Lepkowski (1994) of *Chemical and Engineering News*, who reported that “continuing research by chemical toxicologists has led to the likelihood that MIC, upon reaching the lungs, can be carried throughout the body by glutathione, a molecule abundant in that organ.”

The results of this appropriation and the failure of Indian medical research agencies can be seen in the fact that survivors are still being treated symptomatically 30 years after the gas leak, while the first comprehensive research by the ICMR — arbitrarily terminated by the government in 1991 — was only made public “more than two decades after the disaster.” The second report came after “nearly 30 years, leaving many thinking that they have been reduced to a mere academic exercise” (Sharma 2013, 1870). This failure of state medical authorities is astounding. Even basic statistical work has not been done. In its 2004 report, Amnesty International noted that it “has found no evidence of any systematic attempt by the Indian government to keep a record of gas-related deaths in the 20 years since 1984” (Amnesty International 2004, 12). Hanna (2014) reports that in 2012 the gas relief hospitals in Bhopal still had not established their networked electronic system for tracking patient visits.

Thus, while individual toxicologists, medical researchers, and NGOs did sterling work on the gas and its health effects, the state’s failure resulted in a situation in which the medical system failed to deliver anything but symptomatic treatment. It failed to provide a line of treatment that represented real respite, without considering a cure. Indeed, its promiscuous use of unnecessary and hazardous pharmaceuticals (Correspondent 1991) and treatment of survivors as test subjects (Anon. 2010a) represented an additional burden for the injured population.

Despite the failures of the state and medical system, the gases are undeniably still affecting survivors. It is unlikely that a desire to defraud the state or obtain compensation leads them to waste their time lining up for hours in clinics and hospitals and spending most of their income on treatment. A recent article notes: “Systematic studies conducted in the exposed cohort revealed that a large fraction of the surviving population continues to be chronically ill. Higher incidence of chronic health problems, including pulmonary fibrosis, bronchial asthma, chronic obstructive pulmonary disease (COPD), emphysema, recurrent chest infections,

keratopathy and corneal opacities, have been reported to still persist in the MIC affected population” (Mishra 2011). Surprisingly, issues related to fertility and gynecological disorders are absent from this list (but see, for example, Sathyamala 1996). The mental health effects are also undeniable: “Studies done recently on this unprecedented man-made disaster have revealed both neurotoxicity and a range of mental disorders among the survivors” (Basu and Murthy 2003, 1074). They have also remained untreated: “nothing systematic has been done to tackle the mental health problems that were generated due to the gas disaster” (ibid.).

Legal

The legal system failed to deliver justice. Initially, the legal struggle appeared to be hopeful, with the claim of multinational enterprise liability seeming to offer a way to tear down the corporate veil that insulates transnational corporations (TNCs) from liability for the actions of their subsidiaries. Moreover, India was viewed as a valiant warrior intent on protecting peripheral nations against a major multinational. However, beneath this the actual performance and preparation was lackadaisical.² The conclusion of some legal commentators was that “partial and imperfect as India’s response to Bhopal has been, it gave rise to a number of new legal precedents and mechanisms — absolute liability, interim relief, and *parens patriae* — that may serve as lessons for other countries” (Rosencranz et al. 1994, 62). Yet these must seem narrow victories to those who saw the legal system deprive them of rightful compensation and justice, while allowing the guilty, both American and Indian, to escape Scot-free and members of the legal profession to profit profusely. Perhaps the most basic failure of the legal system was that no national court determined the causation of the leak and consequent liability after examining the evidence. This, combined with the canceling of the state-ordered judicial inquiry in 1985, strongly suggests that all parties involved—the national and local state as well as the culprit corporation—had no desire for the causes of the leak to be examined and established publicly, thereby exposing their culpability.

As Gonsalves (2010) concludes, “the state of Madhya Pradesh, the Union of India, Union Carbide, and the government of the US entered into unholy alliance to undermine and sabotage the efforts of the victims to obtain compensation comparable to the damages awarded in similar mass tort actions in the United States and to have the accused prosecuted speedily in India.”

The Guilty Parties

In the first disaster, the state’s culpability through acts of commission and omission was minor in contrast to the responsibility of the culprit corporation, but this was not true of the second disaster—the failed response to the catastrophic gas leak. As Amrita Basu (1994, 3) argued, “the sufferings in Bhopal cannot be explained simply by the actions of multinational corporations in a neo-colonial context.” The

failures in relief and rehabilitation, the collusive legal settlement with the culprit corporation, and the failure to vigorously pursue medical research all showed that the Indian state's priority was definitely not the welfare of its victimized citizens in Bhopal. In the third disaster, the Indian state also bears some responsibility by allowing UC to exit from India without cleaning up the factory site and dealing with the pollution the factory had caused. However, the most responsible party is the US transnational and its new owner, Dow, a well-known corporate criminal (Katz 2010). Despite eagerly embracing UC assets, Dow has refused to accept responsibility for UC's liabilities in India.

The Transnational Corporation

Bhopal provided an empirical test of the literature proclaiming the arrival of corporate social responsibility (CSR). It heralded a new, improved, humane corporation, responsive to both shareholders and stakeholders and concerned about the triple bottom line: environmental, social, and economic. Alas, UC failed the test. While UC embraced its "moral responsibility," it sought to evade its legal responsibility, or liability, by all means necessary. It did so by following a policy of transfer blaming. First it deflected blame to its Indian subsidiary—now demoted to an affiliate—and then to sabotage by shadowy Sikh terrorists and thereafter by a disgruntled worker. UC fought tooth and nail against all legal cases in the United States and India, including the granting of interim relief. Its claim that the disaster's cause was sabotage was generally seen as a strategy to evade liability. As Lepkowski (1994, 35) notes, "much of the world's safety engineering community doubts the veracity of Carbide's sabotage evidence." Dow has followed a similar line, refusing to accept responsibility for the pollution caused by the corporation it purchased, engaging instead in major public relations activities and paying for private surveillance of the campaign for justice.

The National State

One reason for the state's lack of concern was the marginal position of those exposed to the gas leak. If the wind had blown the toxic gases north to the richer areas of new Bhopal (where the Hindus lived) instead of affecting the poor in the *bastees*, the story might have been different. Aside from incompetence and callousness, the state's failure had two motives: the first was to avoid public examination of connections between the culprit corporation and India's political elite, and the second was the desire not to frighten off foreign direct investment, particularly when state economic policy had embraced neoliberalism. Refusing to go away, the issue reappeared in the form of the struggle over the Nuclear Liability Act (Tyabji 2012). The state displayed the same callousness and indifference in its response to the pollution of groundwater by chemicals in the abandoned factory. Despite findings from the Environmental Health Fund in 1990, Greenpeace in 1999, the

People's Science Institute in 2001, and the Delhi-based Centre for Science and the Environment in 2009, the central and state pollution control boards did not believe that contamination existed, a position they maintained until September 2012 when the Indian Institute of Toxicology Research confirmed the contamination of groundwater (Anon. 2010b).

Local and National State

Basu argues that attention must be paid to the state's role and "to patterns of class and particularly communal stratification within India." To "rectify the disproportionate attention that most accounts devote to the central government," Basu (1994, 4) emphasizes the role of the state government, which has become more important since 1990. He reports on the activities of the Hindu fundamentalist Bharatiya Janata Party (BJP) government after it won the 1990 election. Basu argues that "the BJP government's use of gas-relief funds to demolish slums [mainly inhabited by Muslims] and provide urban facilities for the rich treated poor Muslim families as the dirt to be cleared" (ibid., 13). Further,

The gas disorder enabled the government to undertake its "city beautification program," which consisted of redecorating parks, installing new streetlights, and rehabilitating old monuments in areas cleared of illegal encroachments. Jabbar Khan alleged that by August 1991 the state government had already spent 13,350,000 rupees [\$801,000] it had received from the central government for disaster relief on "city beautification." When I asked Babu Lal Gour [the BJP Gas Relief Minister] how he could justify such expenditures, he neither denied the allegation nor expressed remorse. He claimed that gas victims would be major beneficiaries; for example, new streetlights would be soothing to the visually impaired. In the name of city beautification, the state government failed to provide gas victims with the most basic amenities and deprived them of their houses. (ibid., 11)

Similarly, the disbursement of interim relief was turned into a traditional patronage exercise close to the heart of the Indian political elite: dole provision. That behavior was not confined to the BJP government. A year after the gas leak the state government—then in the hands of the Congress Party—went on a spending spree: "In August 1985 the state government announced proposed spending of 3,320 million rupees on rehabilitation and development of the gas-affected areas. Of this, only 380 million was intended for schemes to rehabilitate the gas victims, while the rest was to be spent on an airport and other transport facilities, as well as on beautifying the city" (Mac Sheoin 2009, 428). When it came to spending on health, vast sums were spent on hospital construction, despite expert opinion favoring community health provision.

Regrettably, Basu is perhaps the only analyst to address this field. Sharma (2009) does offer incisive criticism of the Madhya Pradesh (MP) state government in that period and Hanna's article (in this issue) provides another avenue through which the local state's responsibility could be approached and a thorough analysis of the Bhopal Gas Relief Department is long overdue.

For Bhopal survivors, the implications are appalling. Their initial victimization by the culprit corporation was compounded by the national and local state and by failures of the legal and medical systems that were supposed to assist them. In the considered opinion of the Collector and District Magistrate of Bhopal in 1984, himself a survivor of the gas leak:

It's all a saga of betrayal; betrayal by the Union Carbide in not protecting lives of people from the leaking lethal gas, betrayal in not apprising the vulnerable people of the use of wet cloth to neutralize the lethal gas, betrayal in not disbursing the financial assistance to all gas victims, betrayal in weakening the case of gas victims to get adequate compensation, betrayal by separating the supporting records of medical treatment from the claim applications for compensation and by destroying them, betrayal in properly not prosecuting the case in the USA, betrayal by the state by entering into an agreement with Union Carbide for a hopelessly small amount, betrayal in giving only a token amount as against just and fair compensation, betrayal by sweeping the vital facts under the carpet and in covering up the offences and misdeeds of influential people by disbanding the judicial Inquiry Commission, etc., betrayal by the state in its failure to punish the murderers.... (Singh 2008, xii-xiii)

Literature

Although the struggle over Bhopal was most intense in the legal and medical systems, it was also fought out in public by the chemical industry, environmentalists, trade unions, and members of the public over the issue of whether Bhopal was an unprecedented, extremely rare, or chance occurrence, or simply an extreme and spectacular example of normal accidents in the chemical industry. The academic and popular literature also reflects that struggle, with early academic analyses raising issues related to technology transfer, regulation in peripheral countries, and crisis management.

The books published on Bhopal since the disaster are one indicator. In the Library of Congress, 57 items appear under the subject heading "Bhopal Union Carbide Plant Disaster, Bhopal, India, 1984." Despite some notable gaps, this is probably the best available dataset. After excluding two Hindi items, four other foreign language entries, two editions of a guidebook to Bhopal, and some reprints, 45 items remain, with 27 published in India and 18 published elsewhere. Three of these were government publications, one from India and two published elsewhere.

NGOs, movement organizations, or individuals published 13 of them, eight in India and five elsewhere. Seventeen books were aimed at the mass market, 12 in India and five elsewhere. In the academic literature, five volumes focus on legal issue and the court cases, four from India and one published elsewhere, leaving seven academic volumes, five published outside India and only two in India. However, the two academic publications in India were by a Swedish author and a nonresident Indian, while the only volume by an Indian academic author resident in India was published in New York.

Although mass market and movement authors have engaged with Bhopal, it is peculiar that so few Indian academic authors feature in this literature. Bhopal coverage in periodicals is vast, but aside from a valiant few, who are mainly associated with the *Economic and Political Weekly* and others who are resident abroad, most Indian academics have avoided the issue like the plague. Of the two partial explanations available, the first is that writing about Bhopal did not fit in with the then prevalent mood of “India shining.” With the Indian elephant expected to become an Asian tiger, Bhopal was the idiot child hidden in the backroom, or the upstairs garret, not to be spoken of in polite company. Better to forget Bhopal and move on. The other reason was the real barriers confronting those wishing to undertake independent research in Bhopal. Sathyamala (2008, 17) describes the conditions under which research occurred: working on the issue of pregnancy outcomes, the Medico-Friend Circle “survey team was under constant surveillance and it became necessary to shift the completed schedules every night to a safe place.” In these circumstances, valiant and courageous researchers were needed to take on this work.

A particularly welcome development has been the embrace of Bhopal by a young generation of scholars, who are now receiving their doctorates and entering the academic profession. Many of them are Indian nationals, who unlike previous Indian academics are not intent on neglecting the topic and forgetting the disaster.³ The editors of this issue of *Social Justice* are delighted to publish contributions by members of this young generation — Botelho, Hanna, Kumar, Lakshmi, and Sharma.

Studies of the social movements and campaigns springing from Bhopal have begun to appear in the literature. Despite being one of the longest and hardest-fought struggles (both in India and globally), it received remarkably little attention from scholars of social movements. In contrast, publications on the Narmada struggle, for example, flourished. Until recently, Indian analysts only published a few articles on Bhopal (Sarangi 1996; Rajan 1988, FFM n.d.). In the extant literature, there has been a strong focus on the essential role of women in the movement (Dasgupta n.d.; Mooney 2009; Mukherjee 2010a; Simms 1990).

On the transnational front, Zavestowski (2009) traced the relationship between the movement for justice in Bhopal and what he calls the global anti-toxics movement, while Mac Sheoin (2012a and 2012b) examined the alliance with Greenpeace. On the local and national fronts, the superb work of Dharmesh Shah and Tarunima Sen (published in the Bhopal Survivors’ Movement Study 2009) brought forward the

experiences of activists in Bhopal in their own words and has also informed more theoretical work (Scandrett and Mukherjee 2011; Scandrett et al. 2011). Regrettably, no one has yet produced a portrait of the movement in all its complexity, as it operates across three scales—the local, the national, and the transnational. Much recent research has centered on struggles over representation (Mukherjee 2011a,b; Erler 2009) and memorialization (Bishit 2013; Lakshmi 2012), with some also dealing with the body as a site of struggle (Banerjee 2013).

Some of the most fruitful critical research has conceptualized Bhopal as resulting from the workings of toxic capital. One strand of this research is based on case studies of similar chemical catastrophes, while another has undertaken a more theoretical analysis of Bhopal as an example of toxic capital. The former views Bhopal as exemplifying what Charles Perrow conceptualized in *Normal Accidents: Living with High-Risk Technologies* and has attempted to show similarities between causation, crisis response, and corporate negligence at Bhopal and in other disasters such as at Bhopal's sister plant in Institute, West Virginia (Jones 1987; 1988), BP's Texas City refinery (Mac Sheoin 2003b), and BP's Deepwater Horizon oil rig (Mac Sheoin and Zavestowski 2012). These case studies showed similar patterns in causation, corporate negligence, and crisis management. In Mac Sheoin and Zavestowski's (2012, 86) comparison of Bhopal and the Deepwater Horizon, for example, "both disasters' origins can be found in similar patterns of corporate negligence. The TNCs involved in both disasters share a history of previous incidents, overlooked equipment and design failures and faults, compromised safety through cost-cutting, overextended workers and harassed union organizers, and failed to undertake adequate disaster planning and implementation." The analysis extends Perrow's concept of the normal accident by adding to it Chris Wright's (1986) classic analysis of North Sea oil accidents as "normal events resulting from work structures involving sub-contracting and pressures to complete projects and accelerate production (the 'speed-up'). Thus, these deaths result not just from technical factors, but from the labor process. Both the technical organisation of production and its accompanying labor process point to another level of causation and explanation, that of capital and corporate decision-making, where decisions are made on the basis of profit rather than public and environmental safety" (Mac Sheoin and Zavestowski 2012, 87). The final element in the equation is inadequate and complicit state regulation. Thus, this analysis places blame on both the state and capital.

The more theoretically inclined response sees Bhopal as emblematic of the operations of toxic capital, resulting in a critique of the operations of, in particular, the chemical and petrochemical industries (Pearce and Tombs 1998; 2012). Beginning with an analysis of neoliberalism, the critique turns to the production of "accidents" in the chemical industry before examining Bhopal as a case study. This critique widens concerns far beyond "accidents" and catastrophes to the daily operation of the chemical industry in a wide variety of areas.

The Bhopal Disaster and Capitalist Corporate Form

Making sense of the tragic crises at Bhopal is difficult because its specificity is too easily lost, especially if it is viewed primarily in terms of predictions from powerful theories that to date have adequately explained occupational and environmental disasters. Such theories do explain a great deal, but nuances may be lost or aspects of events and their consequences may be misunderstood if the particularity of the social actors and social forces are not identified. Difficulties can also emerge when the analysis becomes too involved in the details of the events, e.g., that it happened because specific individuals were in particular positions of authority and their subordinates either acquiesced to, or challenged, this authority. Thus, to inductively draw a picture based almost exclusively on the experiences and understandings of those most immediately involved is unnecessarily constraining.

There is a need for a more general framework and an understanding of the roles played by groups and institutions in creating the conditions that made such an ultimately avoidable slaughter possible. Both editors of this special issue have grappled with these questions. One has been guided by a general framework to pose particular questions and is extremely scrupulous about seeking out and evaluating evidence that might justify or disqualify any “proposition” he is exploring. The other, while also being concerned about what occurred, is more oriented to theorizing the overall context and critically interrogating the explicit and implicit accounts offered about how and why the disaster occurred. Interestingly, in explaining what happened, the two starting points produced fundamental agreement about what occurred and where responsibilities lie, but it is always worth digging deeper.⁴

One issue worth exploring is the relationship between changes in the rationality of capitalist business corporations and changes in the economic and political contexts in which they operate. We discuss this briefly below. How did the nature of Union Carbide India Limited (UCIL) and Union Carbide Corporation (UCC), and particularly their legal statuses, contribute to the disaster? This was the latest incarnation of the relationship between the American parent company and the Indian subsidiary stretching back to 1913. It is important to note that UCIL was a limited liability company incorporated in India in 1957 and a subsidiary of its owner, UCC, which was also a limited liability business corporation incorporated in the state of Connecticut, also in 1957. As a corporation, UCC was a legal subject and as such created a new and separate legal subject, Union Carbide India Limited. In 1994, UCC sold UCIL to McLeod Ltd. of Calcutta, which changed its name to Eveready Industries Ltd. In 2001, UCC became a wholly owned subsidiary of the Dow Chemical Company.

A limited liability trading corporation (LLTC) is a thing of some wonder, but, for us at least, of no beauty. To emphasize the nature of the corporation as a social entity, it is helpful to use the Hohfeldian distinctions between right and duty, liberty and no-right, power and liability, as well as immunity and disability (Hohfeld, 1913).⁵

The LLTC is now the dominant form of business organization internationally, and despite variations in details, it is much the same in all jurisdictions. At its simplest, a LLTC consists of four or five parts. The corporation is created when a group of investors who are legal subjects agree to combine their monies to create a new entity: *the corporation, a legal subject*, and register it with the appropriate government agency. Its legal personality gives it an independent existence and it continues to exist until explicit steps are taken to terminate it. It also has some autonomy (or more accurately, it is construed as having autonomy) to act in its own name: it can sue and be sued in its own name with respect to contracts, torts, breaches of trust, and crimes; it can sue or be sued by its own members; it can own property, but not in itself (more accurately, someone who legally has the power to do so can commit it to actions in its own name and thereby commit to the possibility of it being held liable for the actions of that which it formally controls).

The governing body of the corporation, or its board, is legally responsible for setting its policy goals, determining its organization, and defining its fields of activity. Thus, it has the power and the liberty, subject to its duties to the shareholders, to use assets appropriately. They (and, in the United States, dominant shareholders) owe fiduciary duties to the company and its shareholders and may also be liable for some claims by some of the company's creditors. The board includes some shareholders, some outside directors, and, usually, the corporation's chief executive and possibly other members of its executive management team.

The *corporation's chief executive* and his/her management and supervisory team are officers of the corporation. They have the freedom and power to organize the corporation, as well as a duty to ensure consistency with lawful company goals (including appropriate instructions to workers regarding their duties). They are responsible for the day-to-day activities of the corporation's factories, chemical plants, etc. The chief executive reports to the board, but has a great deal of latitude in the policies he/she pursues. Although workers can by their actions create vicarious liability for the corporation, for other purposes, they are not part of it.

Each original investor receives shares in the corporation proportionate to their investment. *These shareholders own the corporation*. They can sell their shares or buy more shares in this corporation or in other corporations and are entitled to shares of their profits, when these are distributed. Other than the monies they have invested in a particular company, shareholders are personally immune from the consequences of the corporation's actions or its debts; they have a limited liability.

General justifications for the corporate form include: that it is an effective way to fund expensive undertakings like railroads, airlines, etc.; that it encourages a high general level of investment; and it professionalizes the information that can be provided to potential investors. The existence of a number of corporations makes it possible for investors to spread their risks by investing in a wide range of corporations in different market conditions rather than investing only in one or two. Everybody

benefits from the system of limited liability business corporations, but not quite. Those suffering from its actions, particularly its externalities, do not benefit at all.

Contrast the extraordinary privileges of limited liability with a partnership, a common form of organization in Adam Smith's day. In a partnership, each partner is jointly and severally liable for anything the partnership does that is irresponsible or illegal, and all of their assets might be seized and each partner might be liable for criminal prosecution. Partnerships encourage responsibility, whereas the corporate form encourages excessive risk-taking and a reliance on a dollar and cents calculation of efficiency. This requires no information on the *modus operandi* of the company's activities, including health and safety and the environment.

Despite their immunities, shareholders control the company, at least formally, through their votes. This raises an important issue. What is the relationship between the representation of the corporation and, in practice, who controls what? There is often a three-way struggle between the major shareholders, the governing board, and the chief executive as to who effectively controls the company. If major shareholders dominate the shareholders and the board and experience no significant opposition, the person they back will become chief executive. In practice, the chief executive and his team run the company. They have the liberty and power to organize the corporation, to determine what markets it should participate in, and whether to continue doing so or not. The corporation and its officers have the liberty and power to hire and fire employees and to instruct them to perform lawful duties consistent with company goals (including appropriate instructions to workers regarding their duties). Corporate directors are legally responsible for determining policy goals, organization, and the kind of business it does, but since they are subordinate to the chief executive, the latter has the power and liberty to use assets effectively. The legal requirement is "to use assets appropriately, subject to their duties to their shareholders." But such a calculation depends upon the time frame chosen and also where investments take place. Great latitude is available to the chief executive to justify the choices made. They may do so by buying a factory or another company, or by selling and reinvesting them, for example, in speculative currency markets. Depending upon the circumstances, the chief executive, the board, and (in the United States) dominant shareholders owe fiduciary duties to the shareholders and may also be liable for some claims by some of the company's creditors. In effect, the chief executive is answerable primarily to the main shareholders and to the market evaluations of the value of the company's shares, but they control what is occurring within the corporation, including most of the accounts of what is occurring.

The crucial aspect, of course, is that should a disastrous accident occur with the possibly millions of dollars in damages, all that is risked by shareholders is the money already spent on buying shares. And the chief executive can use information control to limit his or her exposure. Even if they are dismissed, they receive massive payouts.

Somewhat pessimistically, although the Bhopal disaster produced significant changes in the storage of hazardous materials and the development of evacuation plans, it has done little to limit the ability of corporations themselves, their governing body, and their senior management to distance themselves from legal responsibility and accountability for their acts and omissions in causing the deaths of thousands of people in Bhopal during December 1984. And this despite the stunningly negligent practices of the subsidiary of a US company. Because of the nature of the capitalist corporation and its legal relation to subsidiaries, it proved impossible to effectively hold the parent corporation and its executive officers responsible for this tragedy.

No More Bhopals?

We now return to the central issue of chemical safety, the victimization of exposed communities and workers, and the question of whether Bhopal was exceptional or normal. We lack space for an adequate empirical account of safety in the chemical and petrochemical industry (for a recent review, see Mac Sheoin 2009). Instead, we will briefly review the current situation in the United States.⁶ In his keynote address to the 2012 Global Congress on Process Safety in Houston, Exxon Mobil Senior Vice President Michael J. Dolan argued that the industry should “elevate process safety to a central role in our operations and a critical component of CSR [corporate social responsibility].” He listed some “infamous process safety incidents”—Bhopal, 1984 (“nearly 3,000 people died”), Piper Alpha, 1987 (167 dead), Pasadena, Texas, 1989 (23 dead), Texas City, 2005 (15 dead), and Deepwater Horizon, 2010 (11 dead). He then noted that “every one of these was preventable with good engineering practice and attention to detail. And beneath each of them is a pyramid of near misses in many plants that could have been equally disastrous” (Dolan 2012, 24). Dolan argues that failure to take up the “moral charge” and “to commit ourselves to a safety-centric approach to process operations” risks the welfare of workers and communities, might alienate the public, and could invite “government action that imposes well-intentioned but often misguided regulations and requirements.”

Dolan’s speech may be seen as part of the continuing struggle over safety in the US process industry since Bhopal. Recent developments in that struggle include a push for what many in the industry see as a misguided requirement, demanding that the industry adopt inherently safer technology (IST). One reason for this discussion is the interagency taskforce on increasing safety and security at chemical facilities, led by the Environmental Protection Agency, OSHA, and the Department of Homeland Security (DHS), which President Obama appointed in 2013 in response to the April 2013 West Texas explosion. Its recommendations were due in May 2014. It is also a response to a continuing safety crisis in the US process industry, with the Chemical Safety and Hazard Investigation Board (CSB) reporting 125 significant accidents in the United States in 2012. CSB officials also attribute the push for IST to concerns over the BP Texas City refinery accident in

2005 and an explosion in 2008 at Bayer's plant in Institute, West Virginia, where pure luck saved a 13,000-pound tank of MIC from being hit by flying debris during an explosion that killed two workers. In the Institute case, the CSB recommended the phasing out MIC as part of an IST review of plant operations. In a recent editorial in the *New York Times*, the head of the CSB argued for the introduction of IST: "The U.S. is facing an industrial chemical safety crisis.... Sifting through chemical-plant rubble from catastrophic accidents year after year, our board has long called on regulators to require—and for industry to adopt—what is known as inherently safer technology.... We can't wait for corporations to volunteer because the accidents continue" (quoted in Hess and Johnson 2014).

A reformist element inside chemical engineering has argued consistently for the introduction of inherent safety, including "good engineering practice and attention to detail." Trevor Kletz (1976) first laid out four principles of IST after the chemical disaster at Flixborough, England, in 1974. They are: to minimize use of hazardous chemicals, substitute less hazardous for more hazardous chemicals, shift to less hazardous processes, and design out complexity. The chemical industry in the United States denies the need for IST, while simultaneously claiming to be implementing it. Either way, "industry officials remain steadfast in their opposition to mandatory consideration or implementation of IST" (Hess and Johnson 2014). The arrogance of this position is captured by an official of SOCMA (Society of Chemical Manufacturers and Affiliates), who reportedly said that judgments about process safety are complex and should be made by facility operators, not by "busy government officials sitting miles away reviewing documents" (quoted in *ibid.*).

This highlights the normality of accidents and the same penny-pinching attitude toward maintenance and safety (otherwise known as cost-cutting). Two recent accidents on which the CSB reported are to the point: the April 2010 fire and explosion at the Tesoro refinery in Washington, where seven workers were killed when a pipe ruptured during routine maintenance, and the Chevron pipe rupture and fire in August 2012, which required 15,000 residents to seek care in area hospitals. According to CSB officials, "both accidents were caused by cracked and corroded carbon steel piping that should have been replaced years before the accidents occurred. The degradation problems were known to the companies, and an IST analysis would have led to their replacement with stainless steel components" (*ibid.*).

The worst, and in many ways the most revealing, accident in the United States in the last few years occurred not at a refinery or a chemical plant, but at a fertilizer distributor, where on April 17, 2013, a fire and ammonium nitrate (AN) explosion killed 15 people. No one could claim that the dangers of AN are unknown. In 1921, an explosion involving AN at a fertilizer factory in Oppau, Germany, killed 430; in 1947, an AN fertilizer explosion in Galveston, Texas, killed nearly 600 people, and in 2001 an AN explosion at a fertilizer plant in Toulouse, France, killed 30, injured up to 2,422 people, and damaged over 11,000 buildings (Mac Sheoin 2009, 426, 428). Subsequent reporting revealed how fragmented regulation is, with seven

agencies regulating fertilizer plants in Texas. As the *Chemical and Engineering News* noted, “it seems clear that state agencies that could regulate fertilizer storage either didn’t know about the 270 tons of ammonium nitrate stored there or believed it wasn’t their responsibility. According to the *Dallas Morning News*, the Texas Commission on Environmental Quality had paperwork noting the ammonium nitrate but says it focuses on things like air emissions, not storage safety.” In 2008, Homeland Security became responsible for regulating the sale and transfer of AN, but, as *Chemical and Engineering News* observed, “just how to do this hasn’t yet been settled.” They also reported that the company had not filed a report on its AN storage with Homeland Security, and apparently no fire prevention systems were in place (Fishman 2013).

A further safety issue concerns chemical engineering education in the United States. In 1988, Jones reported criticism of the low importance of safety in chemical engineering courses, with none of the 145 undergraduate chemical engineering courses in US colleges requiring separate safety courses as part of their curriculum. Jones quotes an author of a *Chemical Engineering Progress* article to the effect that “the development of a full understanding of, and commitment to, the maintenance of safety and health *must become* an integral part of the education of every engineer” (in Jones 1988, 222). Michael J. Dolan’s keynote address also speaks to this issue: “Until recently, process safety has been, in effect, an elective both for engineering students and for engineering schools. And too many elected not to give process safety the attention or the emphasis it deserved. These new requirements are a very positive development and they put us closer to the goal of process safety as a fundamental component of the education of every chemical engineer” (Dolan 2012, 26). They are not there yet, but they are getting closer. The same can be said of process safety in general.

Critics have raised two other issues in relation to chemical safety, the deleterious effects of subcontracting and other forms of precarious labor on safety and the victimization of marginal, minority, and poor populations by toxic capital. Our discussion will address only two empirical studies that support these concerns. For the former, a review of studies between 1984 and 2000 that examined health and safety effects in core countries of precarious forms of employment found that 76 of 93 studies “found precarious employment was associated with a deterioration in occupational health and safety (OHS) in terms of injury rates, disease risk, hazard exposures, or worker (and manager) knowledge of OHS and regulatory responsibilities” (Quinlan et al. 2001). For the latter, we cite a study of the accident histories of 15,083 US industrial facilities using flammable or toxic materials above a certain quantity related to demographic conditions of surrounding communities. The main result revealed that “larger and more chemical intensive facilities tend to be located in counties with larger African-American populations and in counties with both higher median incomes and high levels of income inequality. Even after

adjusting for location risk there is a greater risk of accidents for facilities in heavily African-American counties” (Elliott et al. 2004, 24).

Bhopal, Toxic Capital, and Resistance

The contents of this special issue fall into three sections. The first deals with the aftermath of the catastrophe, examining the struggle over the memory and memorialization of Bhopal and the lamentable failure of the medical and legal professions and systems to provide relief and justice to the survivors. The next section examines an example of toxic capital in action in northeast England, the failures of international regulation of chemical hazards, and the chemical warfare attack on Halabja in Kurdistan. The final section looks at resistance to the depredations of toxic capital, beginning with the movement for justice in Bhopal, while also considering recent struggles in India. It provides a short glance at the history and tactics of transnational anticorporate campaigns and assesses what may be learned from two anti-toxic struggles against the oil transnational Shell, in Rosspoint in Ireland and in the Niger Delta in Nigeria. The issue finishes with book reviews on the situation in the People’s Republic of China and on the letters written by a victim of toxic capital, Ken Saro-Wiwa.

Bhopal: Memory, Medical, and Legal Failure

The first article, by Lakshmi and Sharma, addresses how the catastrophe at Bhopal is to be remembered. It recounts an episodic struggle between the state and the survivors over the memorializing of Bhopal. This welcome addition to the literature follows the tradition of oral history that sees the discipline as providing a voice for the voiceless, in this case those of the survivors. Thus, it contrasts the state’s attempts to produce a limited and sanitized memorial with survivors’ claims that the memorial should preserve the factory building (as was the case with buildings in Hiroshima and Nagasaki and at Nazi death camps), thereby memorializing the survivors’ struggle for justice. In the words of Abdul Jabbar of Bhopal Gas Peedit Mahila Udyog Sangthan: “The memorial should talk about survivors’ resilience, their courage, their long struggle against the government and injustices and especially about the meaning of development. And what can be done even now. It should reflect the movement’s issues—to stop the wrong kind of development, to move in the right direction, to safeguard life, health, and environment. It should talk about the various injustices and the role the government and company played in them.” Thus, the survivors’ memorial would be a critical one, focused on injustice and struggle, rather than on the moneymaking disaster tourism project the government proposes. This article is a fine example of the recent literature on representation and memory in relation to Bhopal.

Hanna’s article provides a valuable and disquieting portrait of the medical institutions currently operating under the Gas Relief Department of the MP state

government and draws attention to the failure of the medical profession and the health authorities in responding to the impact of the toxic gases on the health of those exposed. Hanna describes a gas relief system built around an apparent oversupply of hospitals in which many of medical staff employed to deal with survivors of the gas exposure doubted and denied that this exposure has resulted in chronic health problems that require relief. Basic to the problematic situation were earlier failures by the government body charged with responding to the disaster's health implications, resulting in inadequate, truncated, and politicized research that the Indian government treated as a state secret. As Hanna notes, "no comprehensive medical monitoring was conducted on the affected population, and the only large-scale epidemiological studies in the affected areas, conducted by ICMR itself, were methodologically flawed and their publication was delayed.... All 26 studies were abandoned between 1992 and 1994, after only 10 years. Today, despite hundreds of studies, no scientific consensus exists regarding the ongoing morbidity and mortality from the gas exposure." The failures of the medical profession and authorities explain why the survivors of Bhopal receive the same symptomatic treatment today as they did in the immediate aftermath of the disaster.

Hanna describes a system of hospitals, with a bed capacity of 644, nine alternative medical clinics, and 14 dispensaries to care for those exposed to gas. Problems include access to the hospitals (due to distance from the affected areas), understaffing, closed wards, and delays in constructing and staffing the hospitals. Construction of the Pulmonary Centre was completed in 1994, but it was not staffed until 1998. The "super-specialty hospital" began construction in 1987 and opened in January 2000. During that time, its bed capacity had shrunk from a planned 540 beds to only 113 beds, and construction costs trebled. Most amazing were the attitudes of many of the system's doctors. Nearly all of the doctors Hanna spoke with in the gas relief hospitals "exhibited resistance and even anger at the idea that the gas relief system does something special." Doctors experience a double bind: having been employed to care for a special set of patients—the gas exposed—they nonetheless deny that their special services are required. For Hanna, degasification of the gas relief system occurred through official MP state policy when the system was opened in 2010 to the general population of Bhopal. "Under the umbrella of gas relief," Hanna concludes, "a system has been created that fundamentally negates the suffering of victims even as the narrative of their injury sustains it. It now supports what are in practical terms general clinics." This article stunningly shows that the gas relief system has done little to benefit the health of those it was established to serve. Indeed, the system denies the health effects and appears hostile to patients.

Tim Edwards's article turns to failures in the criminal justice and legal processes. He recounts a lamentable history of legal and judicial apathy, delay and misconduct, as well as external political intervention in legal and policing activities. This ensured that no public court examination of evidence regarding the catastrophe's

causation and determination of responsibility and liability took place. As such, those responsible in the US corporation escaped being held accountable. Culpability was reduced to the blood price of a \$470 million settlement in 1989. One indication of the inefficiency and lack of urgency of the Indian state's pursuit of the criminal charges/legal process is that "the extradition request had taken 16 years since the inception of the criminal proceedings."

The article makes a particularly important contribution to the study of the legal dimension in Bhopal by addressing the neglected issue of the criminal charges. Edwards's superb detective work locates the cause of the disaster in UCC's corporate priorities. Considerable evidence is marshaled from internal UCC material that the cost-cutting, neglect of maintenance, and abandonment of UCC engineering stipulations for the safe manufacture of MIC (the essential causes of the gas leak) resulted directly from the US corporation's maneuverings to maintain majority equity ownership in, and thus management control of, its Indian subsidiary. Edwards argues that due to "inadequate materials and design, alongside the operational impacts of the savage cutbacks overseen before, by and after the Bhopal Task Force, are the reasons that on December 3, 1984, there was no immediate detection of a problem; when the problem became apparent, it couldn't be found, when it was found it could not be contained and when the resulting lethal cocktail of gases spewed from the top of a high smokestack, they could not be neutralized." He further suggests that the feared progress of the criminal case against UCC—specifically, the CBI's planned examination of UCC's plant in Institute, West Virginia—was a prime motivation behind the hurried and unexpected 1989 settlement between UCC and the Indian government, which may have been "both unlawful and contractually invalid at the outset." The stakes were much larger than the individual case of UCC and Warren Anderson. Quoting a UCC official, Edwards observes that extradition in a case like this "would place in jeopardy any officer of an American corporation with significant interests in foreign enterprises anywhere in the world in the event of some future disaster. The chilling effect on American investment abroad cannot be overstated."⁷ Stonewalling by US legal authorities and political lobbying by representatives of US manufacturing capital and US political leaders emphasize the importance of the issue to US capital. This article strongly supports the case that issues relating to the political economy of toxic capital were decisive in the causation of the catastrophe and in the failure of national and transnational legal processes to bring the guilty to justice.

Toxic Capital

The article by Tombs and Whyte provides an account of the political economy of toxic capital. It is a meticulous and detailed case study of the impact of a fiberboard factory in an area of northwest England. At issue is a marginalized, impoverished population living close to a factory that "received huge public subsidies and created a local environmental disaster, killed three workers, and, according to the class-

action suit, caused widespread illness throughout the local community.” The scope and intensity of the suffering in Merseyside and Bhopal clearly differ in scale, but the authors successfully argue that both are cases in which “local and national states tolerated predatory capital in ways that exchange human suffering for profit.” The case study the authors detail is particularly significant in that it details not a spectacular disaster at a highly hazardous plant, but the routine, unspectacular, day-to-day operations of a factory that revealingly produces less pollution than another eight industrial processes also underway in Merseyside.

This case study of Sonae supports arguments Pearce and Tombs advanced in 1998. Bhopal and Sonae are manifestations of toxic capital, “a form of production that externalizes poisonous chemical effects, resulting in acute deaths, long-term exposures, illnesses, and increased mortality rates, as well as acute and chronic environmental degradation.” The authors direct attention to the failures of the regulatory system and point out “an often-ignored feature of the process of regulation: the normalization of the redistribution of risks to workers and the communities in which production is located.” This case study provides another example of the operations of toxic capital and the injuries it imposes, as well as the reluctance of the state to regulate these harmful effects.

Mac Sheoin’s article turns to global attempts to regulate chemical hazards and finds them wanting. It develops the theme of regulatory failure by examining the regulation of chemical hazards by international governmental organizations and by the chemical industry through its self-regulatory scheme, Responsible Care, which emerged in response to the fallout from Bhopal. Mac Sheoin outlines the globalization of the chemical industry, with the accompanying globalization of the harms resulting from chemical hazards. Turning to the fragmented attempts at global governance of chemical hazards, he looks at four central international agreements, concentrating on the Basel Convention. The article details problems of compliance, monitoring, and enforcement, as well as failures by nation-states to adopt and implement them. These problems are so basic as to make the conventions, and the governance associated with them, more symbolic than actual. For Mac Sheoin, Responsible Care—the industry’s self-regulatory code of conduct—is a public relations program aimed at preempting or strongly influencing state regulation. Eloquent testimony to the shortcomings of efforts to regulate major industrial hazards is the fact that industrial disasters continue to occur, as evidenced by the included list of major incidents since 2000. In reality, global governance is illusory. This article offers an impressionistic, limited look at national regulation, noting problems with capacity and the will to regulate at that level. It concludes that regulation at international, regional, and national levels has proved to be a lamentable failure and has not protected the public or the environment from chemical hazards.

The final article in this section examines the close resemblance of chemicals for peace to chemicals for war. It therefore focuses upon state crime. The article traces deep parallels between the chemical gas disasters at Bhopal and Halabja,

Iraq, in terms of effects and causes. “Nearly two decades after the disaster,” Sinha notes, “many in Halabja were still suffering from a complex of illnesses that sounds familiar to people used to working in Bhopal. No medical team from Iraq, Europe, the United States, or any international agency monitored either the short- or long-term environmental or health effects of the gas disaster.” In terms of the causes, “both are expressions of the same deeper purpose. In Halabja as in Bhopal, the disasters were rooted in the ruthless determination of corporations to make profits at any cost, aided by the collusion of politicians who facilitated their deals and shielded them from justice.” The article is an encouraging account of individual initiative resulting in social action and is a pleasure to read. It details varied encounters with a wide cast of characters as the author attempted to make English audiences aware of these faraway disasters. The article thus introduces the theme of the third set of articles on social action against toxic capital.

Resistance

The third section deals with social action against toxic capital, with the first two articles (Sharma, Botelho and Zavestowski) addressing the movement for justice in Bhopal, nationally and transnationally. The next article (Kumar) looks at resistance to toxic development in India, while the following one (McSheoin) looks at transnational anticorporate campaigns. The final article (Cox) draws lessons from struggles against Shell in Africa and Europe. Thus, beginning in Bhopal, this section’s scope extends both to the national stage in India (Kumar) and to the transnational level (Botelho and Zavestowski, Mac Sheoin, and Cox).

Sharma’s article performs a double function by tracing the history of dominant images of Bhopal in the Indian media through a qualitative study of the mass media in India from 1970 to the present. After the gas leak, the treatment is divided into three phases that reflect transformations in India’s political economy and accompanying changes in the mass media. Thus, it encompasses three decades during which the Indian media environment was altered by liberalization, technological innovation, and globalization. Beyond tracing the media’s treatment of Bhopal, Sharma also examines interactions between the movement for justice in Bhopal’s and the Indian media, reflecting increasing sophistication in the movement’s attitude and tactics toward the media given its ongoing experience of, and reflections on, media coverage. In the last period, when the movement became a prime mover of media coverage, this growing sophistication became evident.

The second article follows a recent trend in social movement studies of Bhopal. By looking at contestation of Dow Chemical’s sponsorship of the London 2012 Olympics, it describes an episode in the “image war” between Dow and the movement for justice in Bhopal. Botelho and Zavestowski’s article on the movement for justice in Bhopal specifically focuses on the campaign’s transnational activities. As the authors note, transnational organizing has been a staple tactic of the movement, not least because the target of the campaign was a TNC that, following the 1989

settlement, abandoned the Indian market (just as it absconded from the Indian courts). This essentially removed it as a target for local and national campaigning, at least until Dow's recent attempts to reenter the Indian market. Corporate sponsorship of the Olympic Games—a major component of the sports-industrial complex—is an example of corporate social responsibility in action. It may also be a transnational corporate attempt to counteract activist criticism by generating positive publicity.

Such opportunities (and opportunism) can be problematic since TNCs may simply be opening another highly public arena in which their reputations may be attacked. That was the case with Dow's sponsorship of the London Olympics, where skillful lobbying, networking, media work, and demonstrating by local supporters and members of the movement for justice in Bhopal produced media coverage of the unresolved legacy and liability issues Dow faced in Bhopal. Dow's sponsorship became one of that year's top 10 public relations disasters. It increased the media and discursive space available to the Bhopal campaign, which was ably infiltrated and occupied by the corporation's critics.

Madhuresh Kumar's article reports on recent and current struggles in India. Kumar is an official with the National Alliance of People's Movements. Uniting various people's opposition movements, it grew out of opposition to dams in the Narmada Valley. For these movements, Bhopal represents a dire warning of the possible effects of toxic development projects in India, as well as an example of a long-term struggle against a TNC and the Indian state. Kumar argues that Bhopal's role in the struggle for social justice in India requires that we look at the state's development project and popular resistance to it. The first half of the article delineates current state development strategies through industrial corridors and proposed major energy projects, including thermal plants and more dams. Kumar critiques the effects of these projects on the environment and people's livelihoods, especially the impact on water availability since some 70 percent of India's population is still primarily dependant on the agrarian sector. The article details the deleterious effects of previous state-sponsored development projects, such as the 60 to 100 million people dispossessed of their lands and livelihoods and displaced between 1947 and 2000.

The second half of the article examines social movements that have arisen in India in response to, and to prevent, the damaging effects of toxic development projects. Kumar argues that the current "ripples of protest and resistance to the designs of the ruling classes and capital, national and international, are built on the wave of new social movements that emerged after the 'Emergency' in the 1970s." The critique of state development shared by current movements grew out of popular struggles against the Narmada dams and other state and private projects. Employing a twin strategy of opposition and critical engagement, these alliances struggle in the fields of science, technology, and information, as well as on the ground. They also share a critique of the state's development paradigm and propose and endorse an alternative development—"a comprehensive decentralized model

of non-consumerist socialist growth.” A powerful concluding statement, endorsed by many people’s movements, states that “the struggle of Bhopal survivors against Dow Chemical is today emblematic of the communities struggle across country against corporations. Whether it is the struggle of Adivasis of Niyamgiri against Vedanta, villagers of Plachimada against Coca-Cola, villagers of Jagatsinghpur against POSCO, factory workers against Maruti Suzuki, farmers against Monsanto, and many others.”

Next comes Mac Sheoin’s examination of transnational anticorporate campaigns. His review combines a history of these campaigns with a critical look at the tactics they use. Mac Sheoin traces the expansion of these campaigns from their original base in core-country consumer, labor, and religious organizations both geographically (campaigns in peripheral countries that have mobilized peasants, landowners, indigenous, and other groups against TNC projects) and generationally, as each new wave of social movements (the new social movements of the 1970s through the anti-globalization movement of the 1990s) began to target corporations. A division of labor exists between organizations, with some campaigning and others providing ammunition to campaigns by doing research, information, and coordinating (many also take part in campaigns). There is also a division between groups targeting a specific corporation’s activities and others focusing on an industry sector (like genetically modified organisms); some have wider aims (mainly larger NGOs), which may target corporate behavior as part of a campaign for policy change. He also notes tensions over aims, tactics, and strategies between these and other groups that may unite in alliances and coalitions. This section provides a historical context for the growth in anticorporate activity, with the scope and scale of these campaigns widening with the globalization of corporate activities.

Mac Sheoin’s article also assembles the results of empirical studies of the tactics or action repertoire used by these campaigns. Tactics include insider (codes of conduct, litigation, and shareholder activism) and outsider (boycotts and direct action) techniques. Basic to all tactics is research on corporate activity that facilitates naming and shaming. A short section on success and failure in campaigns suggests that the varied results may be related to industry structures, while corporate responses rely on evaluations of the risks campaigns pose to corporate sales and profits. Although campaigns have failed to successfully control or discipline corporate behavior, Mac Sheoin concludes that they will continue “as long as the corporate grip on culture, economy, and society continues.”

The final article assesses what academics and activists may learn from two struggles that are widely separated geographically, but oppose the same corporation: Shell. Cox investigates how movements may understand and tackle toxic capitalism, which requires attending to the power relationships underlying it. He conceptualizes this as “toxic hegemony,” by which he means “the institutionalization of ‘alliances for growth’ between ecologically destructive industries, multinationals, and states, backed up by supportive media and professional expertise and by much wider

coalitions of popular forces, whether organized as consumers, as right-wing opinion politics, as growth-centric trade unions, or as popular demands for development.” Cox examines the possibilities for disaggregating the alliance behind this toxic hegemony and for forming alliances that contest this hegemony. Such an alliance could be constructed around the issue of state repression and violence. His hopes may be over-optimistic, but it is fitting that this section on resistance should end with a consideration of how resistance to toxic capital might succeed.

In her review essay, Hill examines three texts on the environment in the People’s Republic of China (PRC), the world’s largest chemical producer and a country that has undergone an intense industrialization process over the last few decades. In the words of one of the authors she reviews, the resulting environmental crisis has left “Chinese citizens ... swimming in a sea of toxic pollutants.” As in core countries, the problem is not legislation, which on paper is comprehensive and sophisticated, but enforcement by a regulatory system that is “powerless against the partnerships of local government and industrial interests.” The problem is exacerbated by the importance of state capital in the PRC’s economy. Similarly, despite a growing environmental movement that responds to toxic outrages and the deleterious impacts of development, as Hill notes, it lacks political power. Some of the movement’s more affluent areas have scored successes, but often this simply relocates polluting industries to poorer places. The Chinese Communist Party continually suspects independent citizen action and opposes the growth of any power that might undermine or question its own control of the state and the economy. Thus, Hill suggests that ameliorating the PRC’s environmental crisis will require working with the Chinese state, some fractions of which are showing concern at the ecological nightmare state development policies have created.

The final piece is a short book review of Ken Saro-Wiwa last letters. It reminds us that the struggle against toxic capital is a matter of life and death, with the Nigerian state meting out capital punishment—death by hanging—to the author of these letters and his comrades in MOSOP (Movement for the Survival of the Ogoni People).

Acknowledgment: The editors wish to thank all the contributors and those kind enough to review articles for the journal: Steve Bittle, Laurence Cox, James Dickerson, Nic Groombridge, Nick Hardy, Brian Martin, Tara Milbrandt, Laureen Snider, Lorna Weir, Nicola Yeates, and Lorenzo Zamponi.

NOTES

1. Willey et al. (2007) provide an excellent description of the condition of the abandoned factory site, including photographs of bags of chemicals lying around, mercury droplets near certain units, and a corroded tank with unknown contents lying below it.
2. See Singh (2008, 171–76) for a nearly unbelievable account of a meeting between the US lawyers working for the Indian government and MP state administrators and politicians.
3. As one example, a recent chapter on Muslims in Bhopal in a book on Muslims in Indian cities ignored the gas disaster, despite its impact on the Muslim population (Jaffrelot and Wulbers 2012).

4. We are drawing here from Jones (1988), Mac Sheoin (2003, 2009, 2010); Pearce and Tombs (1998, 2012); Pearce and Woodiwiss (1993); and Pearce (1976).
5. In discussing the corporate form, we are drawing on discussions by Pearce and Tombs (1998) and Glasbeek (2002, 2007).
6. This section draws heavily on Hess and Johnson (2014).
7. A communication from an Obama administration official to a top Indian government official strangely echoed this expression: “We are hearing a lot of noise about the Dow Chemical issue. I trust that you are monitoring it carefully. I am not familiar with all the details, but I think we want to avoid developments that put a chilling effect on our investment relationship” (quoted in Raymond 2010).

REFERENCES

- Amnesty International
 2004 *Clouds of Injustice: Bhopal Disaster 20 Years on*. London: Amnesty International.
- Anon.
 2010a “Bhopal Gas Victims Used as Guinea Pigs.” *MFC Bulletin* 340–341: 7.
 2010b “Story without an End: The Continuing Indifference to the Bhopal Gas Victims Is Unconscionable.” *Economic and Political Weekly* 48(12): 8.
- Banerjee, Dwaipayan
 2013 “Writing the Disaster: Substance Activism after Bhopal.” *Contemporary South Asia* 21(3): 230–42.
- Basu, Amit Ranjan and R. Srinivasa Murthy
 2003 “Disaster and Mental Health: Revisiting Bhopal.” *Economic and Political Weekly* 38(11): 1074.
- Basu, Amrita
 1994 “Bhopal Revisited: The View from Below.” *Bulletin of Concerned Asian Scholars* 26: 3–14.
- Bhopal Survivors’ Movement Study
 2009 *Bhopal Survivors Speak: Emergent Voices from a People’s Movement*. Edinburgh: Word Power Books.
- Bishit, Pawas
 2013 “The Politics of Cosmopolitan Memory.” *Media Culture and Society* 35(1): 13–20.
- Correspondent
 1991 “Compounding Injury: Medicare for Bhopal Gas Victims.” *Economic and Political Weekly* 26(13): 818–20.
- Dasgupta, Jashodhara
 n.d. “Leaving Our Fears Behind: Women Claiming Rights after the Bhopal Gas Disaster: A Case Study.” In *Gender, Rights and Development: A Global Sourcebook*, edited by M. Mukhopadhyay and S. Meer, 69–83. Amsterdam: Royal Tropical Institute.
- Dolan, Michael J.
 2012 “The Intersection of Process Safety and Corporate Responsibility.” *Chemical Engineering Progress*, June: 24–27.
- Elliott, Michael R. et al.
 2004 “Environmental Justice: Frequency and Severity of US Chemical Industry Accidents and the Socioeconomic Status of Surrounding Communities.” *Journal of Epidemiology and Community Health* 58: 24–30.

- Erler, Carolyn
2009 "Memory and Erasure: Applying Visual Narrative Power Analysis to the Image War between Dow Chemical Corporation and the International Campaign for Justice in Bhopal." *Journal of Cultural Research in Art Education* 27: 42–62.
- FFM (Fact-Finding Mission)
n.d. "Rebuilding a Devasted (*sic*) Humanity—Civil Society Responses to the Bhopal Case Disaster." *FFM Report*. New Delhi: FFM/TOM: 639–730.
- Fishman, Josh
2013 "An Explosive Situation." *Chemical and Engineering News* 91(17): 3.
- Glasbeek, Harry
2002 *Wealth by Stealth*. Toronto: Between the Lines.
2007 "The Corporation as a Legally Created Site of Irresponsibility." In *International Handbook of White-Collar Crime*, edited by Henry N. Pontell and Gilbert L. Geis. New York: Springer.
- Gonsalves, Colin
2010 "The Bhopal Catastrophe: Politics, Conspiracy and Betrayal." *Economic and Political Weekly* 45(26–27): 68–75.
- Hanna, Bridget
2014 "'Just like Any Other City': The De-Gasification of the Bhopal 'Gas Relief' System." *Social Justice* 41(1–2).
- Hess, Glenn and Jeff Johnson
2014 "Deconstructing Inherently Safer Technology." *Chemical and Engineering News* 92(10): 11–16.
- Hohfeld, W.
1913 "Some Fundamental Legal Conceptions as Applied to Legal Reasoning." *Yale Law Journal* 23.
- Jaffrelot, Christophe and Shazia Aziz Wulbers
2012 "Bhopal Muslims: Besieged in the Old City?" In *Muslims in Indian Cities: Trajectories of Marginalisation*, edited by Laurent Gayer and Christophe Jaffrelot, 159–88. London: Hurst.
- Jones, Tara
1987 "Bhopal: Backward or Advanced?" In *Anti-Racist Science Teaching*, edited by Dawn Gill and Les Levidow, 283–92. London: Free Association Books.
1988 *Corporate Killing, Bhopals Will Happen*. London: Free Association Books.
- Katz, Rebecca S.
2010 "The Corporate Crimes of Dow Chemical and the Failure to Regulate Environmental Pollution." *Critical Criminology* 18: 295–306.
- Kletz, Trevor A.
1976 "Preventing Catastrophic Accidents." *Chemical Engineering* 83(8): 124–128.
- Lakshmi, Rama
2012 "Curating a Bhopal People's Movement: An Opportunity for Indian Museums." *Curator: The Museum Journal* 55(1): 35–50.
- Lepkowski, Wil
1994 "The Restructuring of Union Carbide." In *Learning from Disaster: Risk Management after Bhopal*, edited by Sheila Jasanoff, 22–43. Philadelphia: University of Pennsylvania Press.
- Mac Sheoin, Tomás
2003 *Asphyxiating Asia*. Mapusa, Goa: Other India Press.
2009 "Introduction to the Special Issue on the Bhopal Chemical Disaster." *Global Social Policy* 9: 307.
2010 "Chemical Catastrophe: From Bhopal to BP Texas City." *Monthly Review* 62(4): 21–33.

- Mac Sheoin, Tomás
 2012a “Power Imbalances and Claiming Credit in Coalition Campaigns: Greenpeace and Bhopal.” *Interface* 4(2): 490–511.
 2012b “Passage to More Than India: Greenpeace International Meets the Movement for Justice in Bhopal.” *Monthly Review* (June).
- Mac Sheoin, Tomás and Stephen Zavestowski
 2012 “Corporate Catastrophes from UC Bhopal to BP Deepwater Horizon: Continuities in Causation, Corporate Negligence and Crisis Management.” In *Black Beaches and Bayous: The BP Deepwater Horizon Oil Spill Disaster*, edited by Lisa A. Eargle and Ashraf Esmail, 53–93. Lanham, MD: University Press of America.
- Mishra, Pradyumna Kumar
 2011 “A Pragmatic and Translational Approach of Human Biomonitoring to Methyl Isocyanate Exposure in Bhopal.” *Indian Journal of Medical Research* 135(4): 479–84.
- Mooney, Brian J.
 2009 “Interpreting Women’s Protest: Ethnographic Research with Women Survivors of the Bhopal Gas Disaster.” In *Theory and Practice of Ethnography: Readings from the Periphery*, edited by E. Kasi and R.C. Malik. Bhopal/Jaipur: Indira Gandhi Rashtriya Manav Sangrahalaya/Rawat Publications.
- Mukherjee, Rahul
 2011a “Brandishing Broomsticks and Dumping Dow: Rhetoric of Alternative Media Texts Related to Bhopal Gas Tragedy Activism.” Paper for ICA Conference, May, Boston. At www.allacademic.com/meta/p491534_index.html.
 2011b “From Survivor Testimonies to Scientific Metaphors: Ways of Remembering Bhopal Gas Disaster Through Cinema.” Paper for Visual Communication Studies Division (of ICA), April.
- Mukherjee, Suroopa
 2010 *Surviving Bhopal*. New York: Palgrave Macmillan.
- Narayan, Thelma
 1990 “Health Impact of Bhopal Disaster: An Epidemiological Perspective.” *Economic and Political Weekly* 25(34): 1905.
- Pal, Mahuya and Mohan J. Dutta
 2012 “Organizing Resistance on the Internet: The Case of the International Campaign for Justice in Bhopal.” *Communication, Culture & Critique* 5: 230–51.
- Patterson, Carrie H.
 2011 “The Rhetorical Function of Raghu Rai’s Images of Bhopal.” At <http://cas.umkc.edu/english/publications/youngscholarsinwritings/documents>.
- Pearce, Frank
 1976 *Crimes of the Powerful*. London: Pluto Press.
- Pearce, Frank and Michael Woodiwiss (eds.)
 1993 *Crime’s Global Connections: International Aspects of Crime and Crime Control*. London: Macmillan and Toronto: University of Toronto Press.
- Pearce, Frank and Steve Tombs
 1998 *Toxic Capitalism: Corporate Crime and the Chemical Industry*. Aldershot: Ashgate.
 2012 *Bhopal: Flowers at the Altar of Profit and Power*. North Somercote: Crime Talk Books.
- Quinlan, Michael, Claire Mayhew, and Philip Bohle
 2001 “The Global Expansion of Precarious Employment, Work Disorganisation and Consequences for Occupational Health: A Review of Recent Research.” *International Journal of Health Services* 31(2): 335–414.
- Rajan, Ravi S.
 1988 “Rehabilitation and Voluntarism in Bhopal.” *Lokayan Bulletin* 6(1–2): 3–31.

- Raymond, John
2010 "The Verdict in Bhopal." *Z Magazine* (September 30). At www.zcomm.org/magazine/the-Verdict-in-Bhopal-by-John-Raymond.
- Reich, Michael R.
1994 "Toxic Politics and Pollution Victims in the Third World." In *Learning from Disaster*, edited by Sheila Jasanoff, 180–203. Philadelphia: University of Pennsylvania Press.
- Rosencranz, Armin, Shyam Divan, and Anthony Scott
1994 "Legal and Political Repercussions in India." In *Learning from Disaster: Risk Management after Bhopal*, edited by Sheila Jasanoff, 44–65. Philadelphia: University of Pennsylvania Press.
- Sarang, Satinath
1996 "The Movement in Bhopal and Its Lessons." *Social Justice* 23(4): 100–108.
- Sathyamala, Christina
1996 "Reproductive Health Consequences of Bhopal Gas Leak: Fertility and Gynaecological Disorders." *Economic and Political Weekly* 31(1): 43–57.
2008 "The Interesting Times We Live In." *Economic and Political Weekly* 24, May: 16–17.
- Sathyamala, Christina and Indira Jaising
1993 "Legal Rights ... and Wrongs: Internationalising Bhopal." In *Minding Our Lives: Women from the South and North Reconnect Ecology and Health*, edited by Vandana Shiva, 88–98. New Delhi/Philadelphia: Kali for Women/New Society Publishers.
- Scandrett, Eurig and Suroopa Mukherjee
2011 "Globalisation and Abstraction in the Bhopal Movement." *Interface* 3(1): 195–209.
- Scandrett, Eurig, Suroopa Mukherjee, and Bhopal Research Team
2011 "'We Are Flames Not Flowers': A Gendered Reading of the Social Movement for Justice in Bhopal." *Interface* 3(2): 100–122.
- Sharma, Dinesh C.
2013 "Bhopal Study Represents 'Missed Opportunity.'" *Lancet* 382: 1870.
- Sharma, N.D.
2009 "Bhopal Gas Tragedy: 25 Years of Political Mischief." At <http://ndsharma.wordpress.com/2009/12/01/bhopal-Gas-Tragedy-25-Years-of-Political-Mischief>.
- Simms, John
1990 *Veiled in a Cloud: Women and the Effects of the Bhopal Gas Disaster*. School of Development Studies, University of East Anglia.
- Singh, Moti
2008 *Unfolding the Betrayal of Bhopal Gas Tragedy*. Delhi: B.R. Publishing Corporation.
- Tyabji, Nasir
2012 "Hazard Concerns: MIC at Bhopal and Virginia and the Indian Nuclear Liability Act." *Economic and Political Weekly* 48(41): 41–50.
- Wiley, Ronald J., Dennis C. Hendershot, and Scott Berger
2007 "The Accident in Bhopal: Observations 20 Years Later." *Process Safety Progress* 26(3): 180–84.
- Wright, Chris
1986 "Routine Deaths: Fatal Accidents in the Oil Industry." *Sociological Review* 34(2): 265–89.
- Zavestowski, Stephen
2009 "The Struggle for Justice in Bhopal: A New/Old Breed of Transnational Social Movement." *Global Social Policy* 9(3): 383–407.