Multinational Moral Responsibility: An Analysis of the Bhopal Disaster

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

The 1984 Bhopal gas disaster remains one of the worst industrial accidents in history. At midnight on December 2nd, methyl isocyanate (MIC) gas leaked from the Union Carbide India Limited (UCIL) pesticide plant, which exposed the surrounding population to a highly toxic vapor. This vapor killed thousands immediately and contributed to lasting health and environmental consequences (Varma & Varma, 2005, p. 38). While the immediate causes of the disaster are widely acknowledged, the issue of moral responsibility remains contested. Scholars have debated whether Union Carbide Corporation (UCC), UCIL, the Indian government, or individual employees are the most morally culpable for the catastrophe.

Furthermore, much of the existing literature fails to fully consider the transnational moral negligence that allowed the disaster to occur. Many analyses either focus on UCIL's mismanagement or UCC's corporate decisions without addressing how their intertwined, transnational relationship, along with the Indian government's regulatory failings, fostered an environment where such a disaster was possible. This oversight leads to an incomplete understanding of accountability, ignoring how the structural failings of a multinational corporation, its local subsidiary, and a national government created a morally irresponsible system. By maintaining a fragmented view of responsibility, current perspectives risk underestimating the broader systemic ethical failures that contributed to Bhopal.

This paper argues that the Bhopal disaster was fundamentally a moral failing of UCC, UCIL, and the Indian government, rather than the fault of any individual participating group, or actor. Applying the framework of moral responsibility, I assess how these entities meet key criteria for being held responsible - including causal contribution, wrongdoing, foreseeability, and freedom of action. This analysis demonstrates that the disaster was not the result of isolated

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mistakes, but rather the systemic moral negligence embedded in the transnational structure of responsibility shared by these actors. Understanding this framework not only clarifies who should be held accountable for Bhopal, but also highlights the dangers of multinational corporations operating in regulatory grey areas where no single entity assumes full ethical responsibility. To support my analysis, I will draw upon first-hand encounters of the disaster recorded in both academic journals and legal documents.

Background

The Bhopal plant, owned by Union Carbide India Limited (UCIL), was a pesticide production facility located in Bhopal, India. It was established in the 1970s as part of India's push for agricultural self-sufficiency, with Union Carbide Corporation (UCC), its American parent company (Pariso, 2015, p. 356). The plant primarily produced Sevin, a pesticide that required the highly toxic chemical methyl isocyanate (MIC) as an intermediate. On the night of December 2nd, 1984, routine cleaning introduced water into the methyl isocyanate (MIC) storage tank resulting in a runaway chemical reaction (Eckerman, 2005, p. 217). Within an hour, nearly 30 metric tons of toxic MIC gas had been released into the air. The disaster immediately killed at least 5,000 people, with long-term effects causing an estimated 20,000 more deaths and 200,000 chronic health conditions (Pearce & Tombs, 1996, p. 117). It remains one of the worst industrial disasters in history, with ongoing legal battles and legislative efforts still being debated and implemented decades later (Mac Sheoin & Pearce, 2014).

Literature Review

Although the 1984 Bhopal disaster has been extensively studied, scholars have primarily focused on assigning blame to either the American-based Union Carbide Corporation or the failures of local Indian management and governance. However, they have not sufficiently

examined the transnational nature of the factory's operation and its role in contributing to the catastrophe. For example, Ward Morehouse argues that the moral responsibility for the disaster rests entirely with the U.S.-based Union Carbide Corporation (UCC), rather than its Indian subsidiary (UCIL) or the Indian government. He contends that because UCC owned 50.9% of UCIL's stock, it had ultimate control over key executive decisions, including the design of the MIC storage tanks (Morehouse, 1993, p. 477). Morehouse highlights UCC's failure to provide adequate training materials, its unwillingness to address known safety vulnerabilities, and its negligence in following up on a safety audit conducted two years prior, which had already identified significant hazards. He asserts that "[t]hese problems… cannot be blamed, as the US-based Carbide management has tried to do, on its Indian subsidiary" (Morehouse, 1993, p. 481). While Morehouse presents a compelling case for UCC's moral failings, his argument overlooks the role of local corruption in exacerbating the disaster. The decisions made by UCIL and the Indian government also had severe consequences and cannot be dismissed, as it played an equally significant role in the chain of failures that led to the catastrophe.

Christopher Pariso argues that the moral failing of the Bhopal disaster lies in the concept of "many hands." While the American-based UCC, UCIL, the Indian government, and the individual engineers responsible for operating the defective equipment all played a role in the disaster, Pariso contends that no single actor bears sole responsibility (Pariso, 2015, p. 355). Instead, he applies the problem of many hands to assert that all contributing parties share collective responsibility. He ultimately attributes the disaster to a broader ethical failing within the plant's management and the engineering profession as a whole, calling it a "general ethical failing of the engineering profession as a whole and society in general" (Pariso, 2015, p. 373). While Pariso presents a compelling argument, his analysis overlooks the power dynamics at play

in the disaster. Decision-makers at UCC, UCIL, and within the Indian government held significantly more authority and influence over plant operations than individual engineers. Their failures in leadership due to cost-cutting measures, inadequate safety protocols, and regulatory neglect were the root causes that set the disaster in motion. While collective responsibility is important, this framing risks absolving those in power of their disproportionate role in the catastrophe.

Current literature on the 1984 Bhopal disaster often overlooks the transnational moral negligence of the plant's management, which was not merely a lapse in judgment but an active disregard for ethical engineering and human safety. While some scholars attempt to assign moral responsibility to specific parties, they fail to fully account for how the transnational nature of the key decision-makers fostered a systemic disregard for safety. To address this gap, I apply a moral responsibility framework to analyze how power imbalances and ethical failings among corporate and governmental entities contributed to the disaster. By examining the event through this lens, I aim to clarify the distinctions between involvement and true moral responsibility, demonstrating that while many actors played a role, accountability should be placed on those who enabled and perpetuated systemic negligence. To support my argument, I reference firsthand accounts of the incident, legal proceedings, and scholarly analyses that examine the disaster's key aspects.

Conceptual Framework

My analysis of the Bhopal disaster applies Ibo Van de Poel and Lambèr Royakkers' moral responsibility of engineers framework to assess the accountability of transnational leadership and decision-makers, based on at least two key criteria of responsibility (Poel & Royakkers, 2011). This approach emphasizes that moral responsibility is not solely determined

by an actor's position within a network of events, but rather by the ethical obligations and duties that arise from their role and authority. In examining a historical case like Bhopal, passive responsibility is used to evaluate moral culpability. This entails assessing an actor's accountability and blameworthiness by determining whether their actions meet specific ethical justifications.

Passive responsibility consists of four criteria, of which an actor must meet all of them to be deemed morally responsible (Poel & Royakkers, 2011). The first is wrongdoing, which applies when an actor has violated a norm or obligation, including ethical codes of conduct. The second is causal contribution, meaning the actor played a role in bringing about the event in question. The third criterion, foreseeability, is met if the actor understood the potential consequences of their decision at the time it was made. Finally, freedom of action considers whether the actor made their decision voluntarily, without coercion or external compulsion. Additionally, the degree of responsibility may vary depending on the extent to which an actor's choices were influenced by external pressures.

Using Van de Poel and Royakkers' framework of moral responsibility in engineering, I demonstrate that UCC, UCIL, and the Indian government each have moral accountability for the disaster according to at least two elements in the criteria of responsibility. Then, I argue that individual engineers, while involved, do not bear the same level of responsibility. Finally, this analysis illustrates how the transnational nature of these entities fostered systemic conditions that ultimately led to the Bhopal disaster.

Analysis

Union Carbide Corporation

Union Carbide Corporation (UCC) bears moral responsibility for the Bhopal disaster largely due to its causal contribution and foreseeability of the risks involved. UCC's role in the disaster can be traced back to critical decisions made during the plant's design phase. On the night of the tragedy, approximately 40 metric tons of methyl isocyanate (MIC) leaked from a single storage tank, releasing a dense, toxic cloud that spread across nearby settlements (Pearce & Tombs, 1996, p. 117). This massive release proved especially catastrophic, as the sheer volume of MIC expanded the cloud's reach, maximizing exposure and casualties. The design of the storage tanks was a major factor in the scale of the disaster, as the volume of MIC released was directly dependent on the tank's capacity (Pariso, 2015, p. 356). According to an affidavit from Edward Munoz, former managing director of Union Carbide India Limited (UCIL), the decision to use large storage tanks for methyl isocyanate (MIC) rather than smaller, safer alternatives was made solely by UCC (*Affidavit of Edward Munoz*, n.d., p. 2). While UCIL had advocated for smaller tanks, citing both economic and safety concerns, UCC overruled this recommendation, exercising its authority as the majority stakeholder with 50.9% ownership of the plant. Furthermore, UCC retained exclusive control over capital expenditures exceeding $500,000, ensuring that the final decision rested entirely in its hands. This design choice emphasizes UCC's clear causal contribution to the disaster, as their decision to implement large storage tanks ultimately enabled the massive release of toxic gas.

The decision to construct larger MIC storage tanks despite safety concerns was driven by cost-saving measures and justified by the assumption that these tanks were sufficiently safe, as they were already in use at Bhopal's sister plant in West Virginia. However, this assumption failed to account for the critical differences in safety infrastructure between the two plants. The West Virginia facility incorporated multiple redundant safety features that were absent in

Bhopal. For instance, West Virginia had an additional flare tower to burn off leaking gases, whereas UCC project managers determined that a single flare tower would suffice for Bhopal, prioritizing cost reduction over safety (Pariso, 2015, pp. 358–359). Similarly, while the West Virginia plant had four vent scrubbers designed to remove harmful volatiles in the event of a leak, Bhopal was built with only one, again to minimize expenses.

Furthermore, UCC's decision to forgo redundant safeguards demonstrates its foreseeability, which holds them morally responsible. In 1982, two years before the disaster, UCC engineers conducted a safety audit of the Bhopal plant. The audit identified multiple safety concerns and recommended solutions, including expanding the sprinkler system to reach the outlet of the scrubber to help mitigate a potential MIC leak (Pariso, 2015, p. 360). Despite these findings, UCC failed to follow up or take action to ensure that these safety risks were addressed, despite having an obligation to do so. UCC, as the majority stakeholder with decision-making authority over capital expenditures, had both the knowledge and the means to implement safety upgrades but prioritized cost-cutting instead. This failure to act despite clear warnings makes them morally responsible, as it reflects a negligent disregard for the consequences that ultimately occurred.

The evidence overwhelmingly supports the conclusion that UCC is morally responsible for the Bhopal disaster due largely to both its causal contribution and foreseeability. Its decision to install large MIC storage tanks, despite safety concerns raised by UCIL, directly contributed to the conditions that led to the leak. Furthermore, UCC's decision to reduce redundant safety features further compromised the plant's ability to prevent or respond to disasters. Additionally, UCC's own 1982 safety audit acknowledged the risks posed by the plant's design and operations, yet no corrective action was taken. While the most compelling criteria for

responsibility are causal contribution and foreseeability, UCC could also be considered responsible under freedom of action and wrongdoing, as its decisions were made without external coercion and it violated the norm of implementing a robust safety culture within the plant. However, these factors are less central to its responsibility than the active role it played in designing an unsafe plant and knowingly neglecting necessary safety measures. By prioritizing financial incentives over safety, UCC played a decisive role in creating the conditions that made the disaster inevitable, making it morally responsible despite not being directly involved in daily plant operations.

Union Carbide India Limited

In addition to UCC's responsibility, Union Carbide India Limited (UCIL) is morally responsible for the Bhopal disaster primarily due to causal contribution and wrongdoing. In an effort to cut costs, UCIL turned off the flare tower, which is designed to burn off escaping vapors and significantly reduce the volume of toxic gas released into the atmosphere. The cooling system for the MIC storage tanks was also deactivated, removing a crucial safeguard against runaway reactions. Since MIC reacts violently with water in an exothermic reaction, the absence of a cooling system allowed heat and pressure to build uncontrollably inside the storage tank. This ultimately led to the rupture disc breaking in 1984, triggering the catastrophic gas leak (Varma & Varma, 2005). Therefore, one of the most critical failures leading to the disaster was the deliberate shutdown of essential safety equipment designed to prevent MIC leaks.

UCIL's direct role in disabling these safety mechanisms demonstrates not only causal contribution but also a clear ethical violation where it chose financial savings over human lives. UCIL was operating under financial pressure from UCC, but the company still exercised agency in making decisions that actively worsened the plant's safety conditions. Rather than resisting

these dangerous cutbacks, UCIL management complied with and even implemented unsafe practices, reinforcing a corporate culture of negligence. This decision-making not only contributed to the disaster itself but also escalated its severity, ensuring that when a leak did occur, there were virtually no operational safeguards in place to contain it. Therefore, UCIL bears significant moral responsibility for the disaster, for its broader failure to uphold ethical engineering standards as well as its technical role in enabling the leak.

Prior to shutting down critical safety equipment, concerns about hazardous working conditions had already been raised by plant employees as early as 1981 (Pariso, 2015, p. 360). After multiple incidents highlighting unsafe practices, several workers protested the plant's deteriorating safety standards (Bisarya & Puri, 2005, p. 210). Instead of addressing these concerns, UCIL retaliated by imposing fines on employees who refused to comply with unsafe orders, leading to the resignation of over half of the original engineering workforce by 1983. By the time of the disaster, 70% of employees had been penalized for refusing to disregard safety regulations, fostering a workplace culture that prioritized corporate directives over worker and public safety (Pariso, 2015, p. 361).

This systematic punishment of workers for upholding safety standards demonstrates UCIL's blatant disregard for human life and ethical responsibilities. Not only did UCIL actively enforce unsafe practices, but its decision to replace experienced engineers with largely inexperienced and undertrained workers further compounded the risk of catastrophe. These new hires lacked the expertise necessary to recognize warning signs or properly respond to an emergency, significantly contributing to the magnitude of the disaster (Bisarya & Puri, 2005, p. 211). By knowingly compromising the plant's workforce and ignoring ethical codes of conduct, UCIL engaged in clear wrongdoing that played a direct role in the tragedy at Bhopal. Their

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choices were not merely financial decisions but deliberate ethical violations that created the conditions for disaster, reinforcing their moral responsibility.

As stated previously, UCIL is morally responsible for the Bhopal disaster largely in part due to wrongdoing as well as causal contribution. However, Morehouse argues that UCIL cannot be held fully responsible for the disaster because it lacked true freedom of action, as UCC maintained control over major decisions and continuously pressured the plant to cut costs. However, UCIL still retained agency over certain operational decisions, including the choice to deactivate critical safety systems such as the flare tower and cooling mechanisms. These decisions were made at the local level and were not directly mandated by UCC, demonstrating that UCIL exercised discretion in prioritizing cost-cutting over safety. Additionally, UCIL management actively suppressed concerns raised by employees regarding hazardous conditions, going so far as to fine or penalize workers who refused to engage in unsafe practices. This further indicates that, despite financial pressures, UCIL had the ability to advocate for safety measures but instead chose to compromise them, making it morally responsible for contributing to the disaster. While it is true that UCIL operated under financial and managerial constraints imposed by UCC, this limitation does not absolve it of moral responsibility.

Indian Government

The Indian government is also morally responsible for the Bhopal disaster primarily due to both wrongdoing and causal contribution. The government decided to forgo recognizing the plant as a hazardous industry and restricting its construction near a densely populated city, instead classifying it as a general industry (Pariso, 2015, pp. 361–362). This decision was not an oversight but an intentional violation of zoning laws, as a proper classification would have necessitated relocating the plant to a less populated area. As a result, when the disaster occurred,

thousands more people were exposed to the toxic gas than would have been in a less populated location, directly exacerbating the scale of fatalities and injuries. By disregarding safety regulations in favor of economic and industrial incentives, the government knowingly increased the risk to human life. Because of this, one of the most significant failures of the Bhopal disaster was the government's deliberate misclassification of the Bhopal plant's zoning designation.

Additionally, the Indian government's policy of 'Indianization' played a direct role in the plant's operational failures. The MIC leak was the product of water entering the storage tank via faulty piping as well as lackluster safety protocol during routine cleaning (Eckerman, 2005, p. 217). While UCC ultimately had authority over major design decisions, the government mandated that all equipment used in the plant be domestically manufactured. This requirement overrode safety considerations, as the Indian-made equipment was of lower quality and less regulated compared to the technology used in UCC's West Virginia plant (Lerner, 2017). The government's policy failed to account for these disparities, creating a situation where UCC's assumptions about the safety of large MIC storage tanks did not hold true due to equipment failures. The poor quality of key process and safety components ultimately contributed to the plant's inability to prevent the leak, making the Indian government's role in the disaster more than just regulatory negligence and, instead, a direct causal factor. By prioritizing economic and nationalistic goals over thorough safety regulations, the Indian government played an active role in both creating the conditions for the disaster and worsening its impact, making it morally responsible alongside UCC and UCIL.

While the Bhopal disaster was the product of interconnected failures, it is far less so the responsibility of individual employees who worked at the plant. The concept of moral responsibility requires that an actor has freedom of action, wrongdoing, or foreseeability along

with causal contribution to the disaster - criteria that most plant workers did not meet. Many of the engineers and operators were placed in an impossible position, expected to work under increasingly dangerous conditions while lacking the power to change safety protocols or allocate resources to necessary repairs. In fact, prior to the disaster, employees had repeatedly raised concerns about unsafe working conditions, only to be ignored, fined, or replaced when they refused to comply with hazardous procedures. This demonstrates that their decision-making was constrained by both economic and organizational pressures, meaning they lacked true freedom of action. Additionally, most plant workers did not have access to the same level of information about systemic safety risks as executives and government officials, making them less culpable under the foreseeability criterion. While individual errors may have contributed to the chain of events leading to the disaster, these errors were symptoms of broader systemic failures rather than the root cause. As such, the moral responsibility for the disaster cannot justly be placed on individual employees but must instead be assigned to the multinational leadership of plant.

The Bhopal disaster was ultimately the moral responsibility of Union Carbide Corporation (UCC), Union Carbide India Limited (UCIL), and the Indian government, each of whom played a distinct yet interconnected role in creating the conditions that led to the catastrophe. UCC's cost-cutting decisions and failure to implement adequate safety measures, UCIL's operational negligence and blatant disregard for worker safety, and the Indian government's regulatory failures and prioritization of economic interests over public well-being all contributed to the disaster's occurrence and severity. However, what makes Bhopal particularly significant is that it was not simply the failure of any one entity, but rather the consequence of a transnational network of moral failings. The disaster was made possible by a system in which a multinational corporation, a local subsidiary, and a national government each

had conflicting priorities, divided authority, and shared responsibility - but no singular accountability. UCC, as a foreign corporation, could prioritize profit over safety with little direct oversight; UCIL, as the local operator, was pressured to meet financial goals despite dangerous conditions; and the Indian government, in an effort to expand industrialization, enabled regulatory loopholes that allowed these decisions to go unchecked. This unique interplay of transnational actors, each failing in their ethical duties, created a scenario where no single group bore full responsibility, yet all were indispensable to the disaster occurring. The Bhopal tragedy, therefore, was not just an industrial accident, but was the result of a structural moral failure enabled by the complex nature of its key actors.

Conclusion

The Bhopal disaster was not merely a result of technical failures or isolated negligence, but rather a systemic moral failing shared by Union Carbide Corporation (UCC), Union Carbide India Limited (UCIL), and the Indian government. Through the framework of moral responsibility, this analysis has demonstrated that these entities meet key criteria for ethical culpability through causal contribution, wrongdoing, and foreseeability — while individual employees cannot be held to the same standard. Furthermore, the transnational structure of these actors played a crucial role in enabling the disaster, as it allowed them to shift blame and avoid full accountability, creating ethical blind spots in industrial safety.

This argument challenges traditional perspectives that seek to isolate responsibility to either the local management or the parent corporation and instead highlights the ethical risks of transnational industrial operations in loosely regulated environments. Understanding this systemic failure expands current research on corporate and governmental accountability, emphasizing the need for global ethical standards in engineering and industrial management.

Going forward, this insight should inform policy reforms, corporate governance, and professional engineering practice, ensuring that responsibility is not diluted across borders and that safety obligations are upheld regardless of jurisdiction.

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