

“THE CHALLENGE OF MAN-MADE DISASTERS”

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I. Introduction

This talk is not about solutions. It is, as the title indicates, concerned with questions, or challenges, to which answers are needed. Also, it does not recount the details of actual disasters. They are known all too well.¹

The talk starts by asking what we mean by “disaster”, which is another way of articulating the reasons why we are, or should be, concerned about disasters, and specifically man-made disasters. Then, it discusses some of the challenges that arise in the course of *managing* man-made disasters, that is, paying for them. The concluding part is about the challenges of man-made disasters to *public policy*. This includes prevention in the broadest sense, and concerns insurance as *part of the problem*.

II. Perspectives of the Disaster Risk

The first thing that must be noted about the *nature* of disasters is that they are a *matter of scale* and *perspective*. For the average *individual*, a debilitating disease is a disaster. It can be mitigated to some extent by insurance.

Insurers are in the business of *managing* individual disasters. They live by the law of large numbers. For an insurer, it is a disaster if losses exceed expectations, and reinsurance arrangements fail – things which are not supposed to happen but occasionally do.

In the view of the *public*, neither a single individual tragedy nor a single commercial loss, however large, qualifies as a disaster. When a factory burns down without loss of life, when a television satellite fails to reach its assigned orbit, or when an oil company is ordered to pay six billion Pounds to another oil company as antitrust damages, the news does not usually make it beyond the business pages.

¹See especially the papers submitted (and to be published in the context of the “XIIIème Journées d’Etudes Juridiques Jean Dabin” in Louvain-la-Neuve, 16-18 November 1988, on the subject, “La Réparation des Dommages Catastrophiques”. See also Henri Smets, “L’Importance Croissante des Risques Industriels”, in *Environmental Policy and Law* vol. 17 no. 6 (Sep. 1987) pp. 231-247.

Rather, to be recognised as a disaster in common perception, there must be an additional element: *human victims* – human beings, killed, injured, or homeless, in numbers large enough or circumstances dramatic enough to arouse public attention, sympathy, or outrage.

Recently, *the environment* has been included among the victims that will qualify a loss as a disaster. An ecological disaster may affect animals or plants, even the global ecosystem as a whole.

Individuals and the environment have something in common which distinguishes them clearly from business enterprises – *vulnerability*. Personal injuries and environmental damage cannot be converted neatly and accurately into a *sum of money* for indemnification. Any kind or amount of compensation can never be more than a poor substitute for something which simply cannot be done – restoring a life, bodily integrity, or a part of nature which is irretrievably lost.

Economic enterprises, in contrast, are supposed to be able to take hard knocks. If they cannot, they cannot expect sympathy.

This talk is limited to *man-made disasters*. These need not be accidents. We are now recognising as disasters the sale of pharmaceutical drugs having harmful side-effects, the long-term exposure of factory workers to asbestos, the contamination of groundwater by fertilisers and pesticides, the systematic destruction of tropical rainforests, even the depletion of the ozone layer in the stratosphere.

Man-made disasters involve a *human element* not only on the victim side but also as a *cause*. This is relevant in two respects:

First, the human element on the causation side makes it possible, with the help of liability rules, to *shift* the primary loss (to the extent that it can be expressed in monetary terms) away from the individuals who originally suffered it, and thereby to *concentrate* it on a few individuals or companies.

In contrast to natural disasters, which can be handled through relatively simple first-party insurance, though subject to the problem of mass claims, this requires third-party liability insurance with very large coverage amounts, and entails all the technical problems which are generally associated with third-party insurance.

It is the *combination of human elements* on both sides which makes man-made disasters so difficult to manage. It explains why claims and awards keep increasing,

with increasing amounts devoted to pain, suffering, and other impairments which defy rational measurement; it explains why courts feel the urge to impose exemplary damages for the purposes of *punishing* those who brought about this suffering; and it explains why still hardly anyone is ever satisfied with the outcome.

The *second* essential difference is that natural disasters are unavoidable while man-made disasters imply at least the chance and the challenge of *prevention*.

This last distinction becomes blurred as our knowledge about natural disasters increases and we learn to anticipate them and to avoid or minimise their effects. From the *capability* to minimise the effects there may, under certain circumstances, arise a *duty* to take appropriate action, and *liability* for damages if neglect of the duty causes someone to be injured. A recent case from Germany illustrates this:

A river overflowed its dykes and caused damage to commercial property. Damages were claimed against the municipal government on the ground that it had negligently failed to take appropriate action to prevent the flooding. The Court of Appeals of Stuttgart held that such a duty did indeed exist but that it did not require protection beyond a water level to be expected within a period of 50 years. The Court then found, on the basis of the evidence submitted, that this standard had been met, that the high water in question was one which occurred only every 85 years, and that consequently there was no negligence.²

Even lightning strikes can be anticipated and prevented. When two persons were killed by lightning while standing under a rain shelter, the municipality that had had the shelter constructed at a lightning-prone place without adequate protection was held liable by the Oberlandesgericht Stuttgart.³

And, if an earthquake measuring 5.9 on the Richter scale causes the collapse of an elevated highway which was supposed to withstand a much stronger 'quake, this particular effect takes on the quality of a man-made disaster, and we may expect another series of multi-million-dollar lawsuits.⁴

² Oberlandesgericht Celle, judgment of 19 May 1987, *Versicherungsrecht* 1987 pp. 484-485.

³ Judgment of 19 September 1988, *Versicherungsrecht* 1989 pp. 1163-1164.

⁴ The elevated highway which collapsed during the earthquake at San Francisco on 17 October 1989 had been found not sufficiently earthquake-safe and in need of reinforcement several years ago. See the report in *TIME* (International Edition), Oct. 30, 1989, pp. 26. Consequently, several lawsuits based on this fact were announced within two weeks after the earthquake: C. Woolsey, "Quake victims heading to court", *Business Insurance*, Oct. 30, 1989, p. 65.

III. The Challenge of Managing Man-Made Disasters

1. As mentioned earlier, man-made disasters cause problems because they affect large numbers of persons and because they must, to a large extent, be managed through the third-party liability system. Of these problems, only a few can be discussed here: the allocation of the loss, the determination of reasonable compensation, and international complications.

Primary liability under the law is not necessarily an issue. In some of the most spectacular disasters of recent years, it was never questioned. Liability does cause problems where long-term effects of chemicals from different sources are involved, and generally when there are multiple parties on both sides, and the causal connections are unclear.

Some of the worst problems are related to *allocation and expansion* of liability. The unfortunate human being who is most clearly identified as the cause of the disaster and the one who is primarily responsible for it under the law, is usually also the one least able to carry the financial burden, and least likely to be adequately insured. This then starts the search for the "deep pocket", which has put such a strain on the liability system.

The tort liability system, however, is designed to manage claims among *individuals*, on a one-on-one basis. When it is confronted with large numbers of claims based on similar circumstances, it tends to produce very uneven results. Where the decision is in the hands of juries, the cost, slowness, and unpredictability of the tort liability system become a nuisance.

The American asbestos claims provide the most impressive evidence.⁵

2. *Determining or estimating the amount* that must eventually be paid as damages is difficult everywhere, due to the fact that human suffering and damage to the environment do not have a price that could be measured by any objective standards.
3. Both of these problems are compounded in *international* settings. That the place of the accident and the nationality of the victims are important matters is obvious. One only needs to compare the oil spill of the "Exxon Valdez" off the coast of

⁵ See e.g., D. Hensler *et al.*, ASBESTOS IN THE COURTS: THE CHALLENGE OF MASS TOXIC TORTS (Santa Monica, Calif.: Rand Corp., 1985).

Alaska earlier this year with the spill of the “Amoco Cadis” off the coast of Brittany in 1978.

The French oil spill fouled up a coastline stringed with settlements and extensively used for tourism and oyster farming. The total price for cleaning up and paying for all the losses now stands at about 70 million Pounds, according to a proposed judgment, which has yet to be formally announced and is likely to be appealed.⁶

In contrast, in Alaska, where the economically measurable damage was limited to catches lost by salmon fishers, and all other damage was to wildlife and to uninhabited shores, the oil company has already spent more than 600 million Pounds on cleanup work alone. The cleanup is likely to continue, and in addition the company faces the usual mass of lawsuits for damages on various grounds.⁷

Also, it seems safe to predict that if an accident of a kind and scale comparable to that of Bhopal were to occur in the United States, the claims would most likely bankrupt even a large company, as asbestos claims did.

Therefore, it is not at all surprising that the central issue in the legal proceedings following the Bhopal accident was whether American or Indian standards for determining damages should control. It explains the efforts of Indian claimants to have their claims adjudicated by an American court.

The Indian claimants who went to American courts found out what other foreign claimants had found out before – that American courts are not favourably inclined toward treating foreign nationals with the same generosity that they ordinarily show towards American claimants. The Indian claimants were referred back to the Indian courts, as the more convenient forum, as well as to Indian law, standards and values.⁸

⁶ For details, see W. Pfennigstorf, “Amoco Cadiz vor Gericht – Zehn Jahre und kein Ende”, in *Versicherungsrecht* 1988 pp. 1201-1207, and “Der Fall Amoco Cadiz – Noch immer kein Urteil”, in *Versicherungsrecht* 1989 pp. 880-881.

⁷ See, e.g., *TIME* (International Edition), Sep. 25, 1989, pp. 38-39.

⁸ In dismissing the case, Judge Keenan recognised the claimants’ interest in having American law and procedure applied but expressed the view that India’s interest in having the case tried by its own courts and under its own laws was paramount, and that imposing American laws and standards on the case would amount to a new form of imperialism. *In re Union Carbide Gas Plant Disaster at Bhopal, India in December 1984*, 634 F. Supp. 842 (S.D.N.Y. 1986) *affirmed* with minor modifications, 809 F. 2d 195 (2nd Cir. 1987).

The case was eventually settled in India without a trial, for an amount of about 300 million Pounds payable to the Indian government as the sole representative of all the victims. Whether this is “enough” will remain a matter of dispute.⁹

Actually, by asking for dismissal in the United States and by subjecting itself to the jurisdiction of the Indian courts, the defendant company had incurred a considerable risk. The Indian government had demanded about 1.9 billion Pounds.

The principal aim of the settlement appears to have been to get it over with as soon as possible and with as little expense as possible. A court trial in this case would have been a nightmare for all involved. Union Carbide had already incurred costs of about 19 million Pounds. In the Amoco Cadiz case, the legal costs are already estimated to be equal to the amount awarded as damages.

If Bhopal demonstrates the impossibility of agreeing on a fair price for human lives and human suffering, the oil spill cases demonstrate the difficulties of measuring damage to the environment.

It is easy enough to add up the cost of cleanup work actually undertaken, but that does not resolve the unavoidable disagreements on “how clean is clean” and what actions are *necessary* or *reasonable* to achieve a given level of cleanliness. Much the same is true for the restoration of natural resources such as plants and animals.

Nature recovers if left alone. The question on which agreement seems impossible is whether and how long we are willing to *wait* for nature to recover and what must, or should, be done to help.

To this question there is no objective answer, despite the pioneering work of IMO, the International Oil Pollution Compensation Fund, and OECD in trying to develop general standards. The answer depends on each person’s and each nation’s private and public values and priorities as well as on the financial and technical *capacity* to do the work.

4. One of the problems of compensating ecological damage is that forests and waters, and the plants and animals living in them, often have no clearly defined owner and therefore no standing in court.

⁹ See, e.g., the report in TIME (International Edition), Feb. 27, 1989, p.13.

Individuals do have claims, which they may pursue in court, but in cases involving many parties and complex problems of proof and transcending national boundaries, these rights are useless. In such cases, it becomes a practical if not legal responsibility for the *government* to step in with immediate relief programs and then to pursue any claims against responsible parties.

The French government did so in the Amoco Cadiz case and in the Rhine pollution case of Basel, on a voluntary basis, leaving individual claimants the option to pursue their claims independently, which many did. In the Amoco Cadiz case, this resulted in many cases of double-dipping, mostly accidental but in some instances fraudulent.

In the Bhopal case, the need for mediation by the government was much more obvious and much more urgent. By emergency ordinance, the government assumed the right to pursue the claims of all victims *exclusively*.¹⁰ Under the circumstances, this appears sensible, but the right of the government to act for its citizens as *parens patriae* in such a way has been challenged on constitutional grounds.

5. The International Oil Pollution Compensation Fund is an impressive example of international cooperation to avoid the legal problems, burdens, and uncertainties of cross-national litigation. It has had its share of court contests, but a look at the Amoco Cadiz case should be sufficient to demonstrate the merits of this approach.

Hardly anyone – excepts perhaps some trial lawyers – would disagree that it would be desirable to have similar systems for nuclear power plants, for chemical plants, and for transporters of hazardous materials. Although considerable work has been done to this end in the European Communities, I fear that this challenge will be with us for a long time, mostly because of differences in national attitudes toward the risks involved.

When medical experts say, as on the basis of their knowledge they must, that there is no such thing as a “safe level” of exposure to potentially cancer-causing agents or conditions, and when the public in a particular country becomes sensitised to that risk to a very high degree, then the government *must* take

¹⁰ Bhopal Gas Leak Disaster (Processing Claims) Ordinance 1985, Gazette of India (Ext.) Pt. II Sec. I, No. 19, Feb. 20, 1985. See also Comment, “Parens Patriae Representation in Transnational Crises: The Bhopal Tragedy”, 17 *Calif. Western Int'l L.J.* 175-207 (1987); Comment, “Parens Patriae and the Union Carbide Case: The Disaster at Bhopal Continues”, 21 *Cornell Int'l L.J.* 181-200 (1988).

measures commensurate to that concern any time there is a threat of potentially harmful contamination, even if in other countries the level of concern is lower, and regardless of whether there is a possibility of recovering the loss and cost from the source of the contamination.

6. It seems that man-made disasters have routinely been insured, although not always to their full extent. The complex many-layered webs of excess liability coverages have been developed specifically with the disaster potential in mind.

Whether the traditional method of insuring the disaster risk is the *most efficient* one conceivable is a different question. What can be said in favour of it is that it is the product of a competitive market. It has been suggested, however, that the disaster risk could be covered more effectively if insurers were to join together to provide the needed amounts of coverage in one piece.¹¹

Insurance buyers in the United States do not seem to have been fully satisfied recently, at least with the dependability of the market, perhaps also with the quality of the products offered.

The London market has long been known for its capacity to provide *coverage for any risk* if the premium was right. Now it seems that there are some risks with a disaster potential, especially in the area of environmental liability, for which coverage is not available *at any price*.

The primary cause seems to be the difficulty of calculating a “right” premium for the environmental risk, given its long-term nature and its tendency to expand beyond all reasonable expectations (of either party) over time. And, *if* an insurer calculates a premium by making appropriate provision for all uncertainties and contingencies, it faces the challenge of convincing potential buyers that this is indeed the right premium.

Perhaps the *real challenge* is more basic. It may result from the use of a *short term policy* to cover what is essentially a *long-term risk*. It cannot work. The risk calls for an approach that is suited to its long-term nature – policies running over many years, subject to appropriate adjustments to take account of changes as they occur.

¹¹ This opinion was expressed by Fred R. Marcon, President of Insurance Services Office (*i.e.*, the leading rate-making organisation of the United States), in an address to insurance agents. *Insurance Rev.*, Oct. 1988, p. 18.

Those who think that cannot be done might get some inspiration from the long-term business that is being done now, such as life insurance. Perhaps competition in the market is too strong for a new approach of this kind to be viable. But competition can also come from *outside* the market – from insurance buyers who decide that they can satisfy their insurance needs, as they see them, by associating and *doing it themselves*.

Do-it-yourself insurance, also known as *mutual* insurance, has a long tradition, at least as long as commercial insurance.¹² In the United States it is more popular than ever. Some mutual ventures (*e.g.*, those in the field of medical malpractice liability) have been miserable failures. Others have been extremely successful and have become parts of the regular market (the most impressive example being the Factory Mutual Companies).

The characteristics of the man-made disaster risk make it a perfect candidate for mutual structures – the need for long-term dependable coverage, the need to spread the risk over time, the emphasis on prevention.

This is the challenge of the “*alternative market*”, which has developed in Bermuda and other exotic places in the form of various types of mutual organisations, specifically for managing very large liability risks.

7. It is in the nature of a disaster that its cost cannot be absorbed fully by the insurance market, or, for that matter, by alternative arrangements, or by the responsible company. Then the government by necessity becomes the insurer of last resort. As noted, governments are already charged with the responsibility to provide interim relief and to represent victims who cannot pursue their claims directly.

Furthermore, it is easy to construct disaster scenarios where the loss would exhaust the resources of a nation, even a prosperous one.¹³ International solidarity in such cases has a long tradition.

Even a disaster for which ample compensation is available *remains* a disaster, however. The human suffering cannot be undone.

¹² For an exhaustive account, see J. Bainbridge, *BIOGRAPHY OF AN IDEA: THE STORY OF MUTUAL FIRE AND CASUALTY INSURANCE* (Garden City, N.Y.: Doubleday & Co., 1952).

¹³ Studies of this kind have been undertaken in the United States. See, *e.g.*, *CATASTROPHIC LOSSES: HOW THE INSURANCE SYSTEM WOULD HANDLE TWO \$7 BILLION HURRICANES* (Oak Brook, ILL.: - Industry Research Advisory Council, 1986); K.A. Solomon *et al.*, *MORE ON INSURANCE AND CATASTROPHIC EVENTS: CAN WE EXPECT DE FACTO LIMITS ON LIABILITY RECOVERIES?* Santa Monica, Cal.: Rand Corp., 1978).

IV. The Challenge of Prevention

This leads to the *challenge of prevention*. Man-made disasters *can* be prevented., Compensation is no satisfactory substitute for prevention.

Insurance has become a basic *economic necessity*. No prudent businessman will start a new operation without having first secured appropriate insurance coverage. This is a role of which insurers have reason to be proud — they make economic activities and economic progress possible.

But it also means that insurers have *power* — the power to *promote* economic activity and progress by providing coverage or to *restrain* or delay progress by withholding coverage.

An insurer which provides coverage to an entrepreneur engaged in risky operations, thereby contributes to the disaster which results when the risk materialises.

Of course, the disaster potential may go undiscovered at the time of underwriting. If it is discovered, the insurer may withhold coverage or may charge a premium commensurate to the disaster potential, that is, a premium which is presumably large enough to encourage the entrepreneur to look for less risky alternatives.

The inherent tension between *insurance and prevention* has been a cause of concern for a long time. Three hundred years ago, in the second half of the 17th century, shipowners and merchants in Hamburg complained about losing an alarming number to ships to enemies and pirates. The government of the city of Hamburg offered to provide convoy protection if the merchants would contribute to the cost. The merchants sat down and figured, and then decided to go without protection because the cost of insurance was lower. A hundred years earlier, around 1568, the governor of the Spanish Netherlands even *prohibited* marine insurance to force the shipowners to defend themselves forcibly against the English.¹⁴

Liability insurance in particular has been viewed with suspicion. In 1971, the State of New York prohibited insurers from covering pollution which was not sudden and accidental. The cost of liability for known regular pollution was to rest on the polluter.¹⁵

¹⁴ F. Plass, *GESCHICHTE DER ASSECURANZ UND DER HANSEATISCHEN SEEVERSICHERUNGS-BURSEN HAMBURG-BREMEN-LÜBECK* (Hamburg, 1902), p. 69.

¹⁵For details, see W. Pfennigstorf, "Environment, Damages, and Compensation" in 1979 *American Bar Foundation Research J.* pp. 347, 440.

On the other hand, liability insurers have been subject to enormous pressure, through legislatures and courts as well as through the market, to *expand* coverages, to the end that accident victims would be better compensated.

In short, insurers find themselves caught between *conflicting public policies*.

It is as unfair to blame insurers for not providing coverage for activities with a known disaster potential as it is to blame them for providing that coverage. There may be cases where even a disaster risk must be accepted knowingly for the public good.

This decision, however, is one that should not be left to the insurers but should be made at a level and in a context where the full range of generally accepted values and public policy goals can be considered.

There have been instances of such *political decisions*, most notably in the case of private use of nuclear energy. In that case, the energy industry and the insurers refused to commit themselves until the government had stepped in as insurer of last resort.¹⁶

Another notable case was the Swine Flu threat in the United States in the 1970s, when the government decided that it was necessary to vaccinate the entire population to prevent an outbreak of a very dangerous strain of influenza. Again, vaccine manufacturers and insurers could be persuaded to cooperate only after the government has assumed the full risk of damage claims for harmful side-effects.¹⁷

When decisions are made at the political level, the risks of a pesticide plant like that of Bhopal would have to be evaluated in relation to the threat of widespread crop failure and mass starvation in a country of limited resources, and in this context would appear in a different light.

Insurers are experts in analysing risks. Even with their best efforts, they cannot detect all disasters risks in time. They must never forget, however, that from their expertises there arises a special responsibility towards the public: to make known any disaster risk as soon as it is detected so that a reasoned decision can be made at the political level whether to eliminate or to accept it.

This, it is submitted, is the greatest challenge of man-made disasters.

¹⁶ See, e.g., H.P. Green, "Nuclear Power: Risk, Liability, and Indemnity", 71 *Michigan L. Rev.* 479 (1973). The result was the well-known *Price-Anderson Act* of 1957 (Pub.L. No. 85-256, 71 Stats. 576-77) in the United States, and equivalent legislation in other countries.

¹⁷ See, e.g., R.E. Neustadt & H.V. Fineberg, *THE SWINE FLU AFFAIR* (Washington, D.C.: U.S. Government Printing Office, 1978).