Compensation of Pollution Victims in Canada

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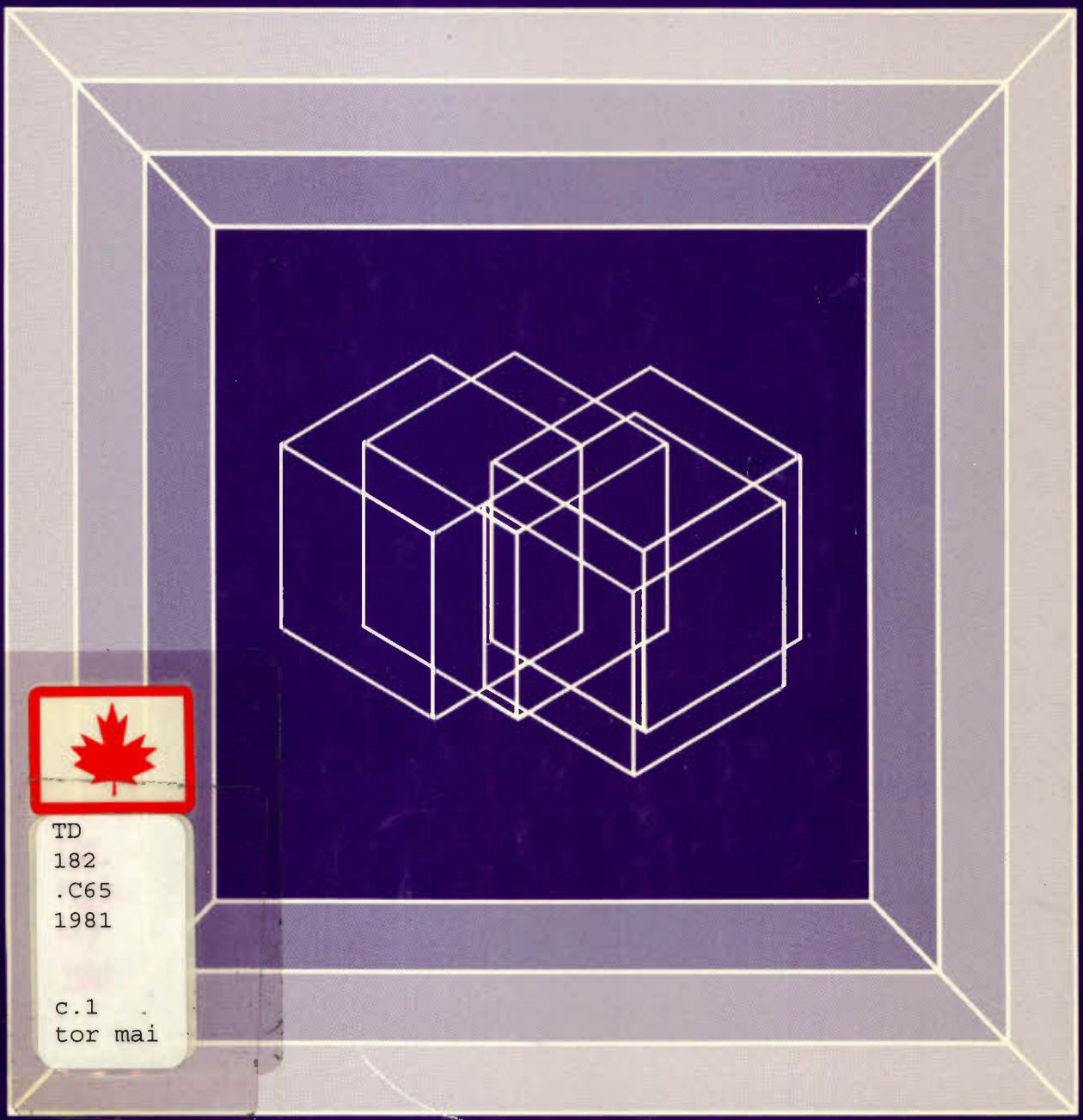
John Z. Swaigen

A study prepared for the
Economic Council of Canada



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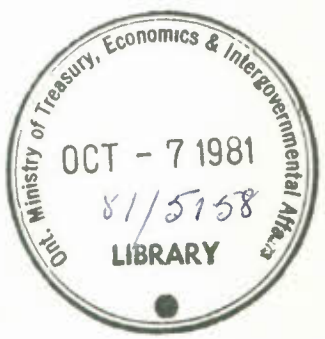

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Preface: Compensation and Regulation

This report was prepared under the auspices of the Canadian Environmental Law Research Foundation as a background paper for the Regulation Reference undertaken by the Economic Council of Canada. It was submitted to the Council through the Westwater Research Centre of the University of British Columbia, which co-ordinated the research into environmental regulation.

How does compensation of pollution victims enter the question of regulating polluting industries? At first glance, compensation may not seem related to government regulation of the economy. However, it may affect the extent, manner, and success of regulation in at least three ways.

First, underregulation of the economy may increase the need to compensate victims of pollution – an undesirable social cost. The Council's reference arose from a concern that government may be "overregulating" industry and, in so doing, imposing unnecessary and socially harmful burdens on the economy. Yet enterprises that adversely affect the environment are arguably "underregulated." One need only open the newspaper on almost any day to discover some problem area virtually devoid of regulation.

For example, in Ontario, farming activities are exempt from almost all environmental laws, yet farming is one of the major sources of water pollution in the province. There is no treaty between Canada and the United States to restrict transboundary transport of acid rain. Ontario has no binding water quality standards that must be met by every potential polluter, but rather makes do with case-by-case guidelines. In most provinces, there are no records of the location of waste disposal sites: there could be thousands of abandoned sites that are potential "Love Canals." These are but a few recent examples.

Does underregulation create higher compensation costs? Consider one example: it has been estimated that the Mississauga train derailment incurred over $17 million in potential compensation costs. One could argue that all these costs would have been avoided if the Canadian Transport Commission had a rule that trains could not carry flammable products and toxic materials in adjacent cars.

Secondly, even though inadequate regulation may result in increased compensation costs, compensation provisions must nevertheless go hand-in-hand even with excellent regulatory schemes. Effective regulation should minimize the situations that create a need to compensate pollution victims but, in a highly industrialized society, no amount of regulation can completely eliminate the need for compensation. It would be short-sighted to design a regulatory system that ignores this residual need.

Finally, if "compensation" were viewed solely as an after-the-fact strategy – "a cure" while the term "regulation" were limited to preventive mechanisms, the compensation issue would be merely incidental to any study of regulatory schemes. But if the requirement to pay compensation is seen as an inducement on polluters to modify their behaviour to anticipate and prevent pollution, then compensation may be considered an integral part of a regulatory system.

The Council has defined laws as being regulatory when their objective is to alter the economic behaviour of individuals in the private sector. If this is the case, there is an argument that compensation systems are regulatory mechanisms since they may not only perform the function of reimbursing victims of pollution for their losses but also deter polluters from creating the conditions in which pollution may occur. Indeed, the tension between the competing goals of relief to victims and deterrence of polluters in a model compensation system is one of the main themes of this paper.

This paper was submitted to the Council in January of 1980. It is generally accurate to December 1979. In the ensuing year, there have been several developments that are worthy of mention. Saskatchewan passed amendments to its *Department of the Environment Act* in June of 1980 that are derived from Part VIII-A of Ontario's *Environment Protection Act*, which is described in Chapter 5 of this study. The Saskatchewan amendments provide that anyone suffering loss or damage as a result of the discharge of a pollutant has a right to recover compensation from the owner of the pollutant or the person in control of it "without proof of fault, negligence, or wilful intent." Ontario's "spills bill" has not yet been proclaimed in force or the funding corporation established, despite the Minister's promise to attempt to draft the necessary regulations and hold public hearings on them within six months of the bill's passage. The federal Department of Transport has circulated for comment extensive amendments to Part XX of the *Canada Shipping Act*. A federal *Transportation of Dangerous Goods Act* has been passed without any third party liability compensation provisions, despite lobbying by environmentalists for such provisions.

Also, the provisions of the proposed U.S. "superfund" legislation aimed at compensating victims of chemical spills and hazardous waste disposal sites for loss of income and property damage have been deleted as a result of industry lobbying.

In revising the paper for publication I have made reference to these developments only where they illustrate a particular point.

Toronto
December 1980

Compensation of Pollution Victims in Canada

1 Introduction

This paper will discuss and evaluate mechanisms available to provide compensation to persons who suffer loss or injury as a result of pollution, and make some tentative recommendations for reforms. Chapter 2 discusses the reasons why a policy of compensating victims of pollution is a sound one and also discusses the rationale for improving existing compensation systems. Chapter 3 analyses the goals or objectives that the compensation system might seek to achieve and the various competing social goals and considerations that may result in a modification of the primary goals of the system. The relative importance of the two primary goals of a compensation system and the effect that giving these goals different weights will have on the design and function of a compensation system is discussed in this chapter, too.

Chapter 4 describes and evaluates the primary existing legal regime for providing compensation in cases of pollution-related damage, the common law tort system, and the role played by insurance in supplementing this system. An analysis of torts and insurance reveals important defects. In Chapter 5, these defects are used as the basis of analysing the adequacy of recent statutory attempts to replace or supplement the current tort and insurance regime with improved methods of providing compensation. The defects of the existing system and an analysis of the extent to which recent initiatives in Canada and selected foreign jurisdictions remedy these shortcomings serves as a tentative approach to the development of a new model for compensation of pollution victims, one which will achieve the key goals or objectives identified in Chapter 3, while addressing the need to accommodate achievement of these goals to other competing social goals and power relationships.

This section will describe all of the significant Canadian federal and provincial legislation of which the author is aware, although it may not be comprehensive, and selected foreign legislation chosen for description because of its breadth or innovative techniques. The study does not purport to provide a comprehensive survey of all voluntary and statutory pollution compensation schemes throughout the world. Most of these schemes are similar in most ways to each other and to those described, and are well documented elsewhere.

The investigation is limited to harm caused to personal health and property interests by the discharge of pollution. The important question of compensation of the Government or the public in general for degradation of public land, water, and air as a result of pollution is not considered; nor is the problem of compensating persons for lessening of the quality of life or use and enjoyment of their property or of parkland and other public property as a result of land use planning and land management decisions, the depletion of natural resources, or the depletion of energy sources.

The study is based primarily upon library research, including analysis of reported cases and statutes. Some of the information is based upon interviews, particularly interviews with the administrators of compensation programs and with persons in the insurance industry. In addition, the author has relied upon his own experience in the practice of public interest law.

Throughout this study, the terms "loss," "injury," and "damage" are generally used interchangeably. However, the term "damages" is not synonymous with "damage." "Damages" refers to those losses or injuries considered compensable under the common law tort system and which can be awarded by the courts under that system to a victim of pollution. At times, the study may refer to "the person suffering harm or loss" and "the person alleged responsible for harm or injury." More often, however, the terms "victim of pollution" and "polluter" will be used. These more value-laden terms are used primarily because they are less unwieldy than the former terminology, and should not be taken to imply any value judgments other than those explicitly stated.

Remedial funds to alleviate the consequences to individuals of harm or injury caused by pollution are

currently available through combination of common law rights and remedies and insurance. These primary sources of funds have been supplemented in recent years by a variety of statutory provisions, but there is no single comprehensive system for providing compensation that is fair, efficient, expeditious, and inexpensive.

In the past decade, there have been a number of pollution incidents that have resulted in losses and injuries that remained uncompensated for a long period of time[1] or were compensated by government rather than by the person responsible for the business activity that led to the contamination.[2] These incidents have led to mounting criticism of existing techniques by victims of pollution, politicians, the legal profession, and public interest groups. However, governments have been slow to respond to the perceived problem.

The low priority given to compensation legislation may be due, at least in part, to a desire to focus on environmental strategies that can play a more direct role in preventing pollution incidents and containing their harmful effects. In past, regulation has focused on the setting of standards, licensing of activities with the potential to cause pollution, financial responsibility requirements, financial incentives and government assistance to polluting businesses, and prohibition of discharge that may harm the environment. More recently, legislation has imposed requirements to take remedial action to mitigate the adverse effects of pollution incidents and restore the affected environment or property. Such legislation has broadened government's power to take remedial measures in the absence of action by the person responsible and to order the person alleged to be responsible to take action without any prior hearing. However, legislative reforms have usually stopped short of clarifying and increasing liability for compensation of persons who suffer harm or loss.

The need to compensate for permanent losses arises after government and industry have taken numerous, perhaps costly, steps to prevent, control, mitigate, and remedy pollution damage. Regulatory agencies have tended to close the books on a pollution incident when everything reasonable has been done to prevent its recurrence and mitigate the harm. Industry, having undertaken large expenditures to mitigate the damage and prevent further occurrences may resist additional expenditures. This is particularly true when the harm involves no permanent injury to health. As most pollution incidents in Canada have resulted in property damage, inconvenience, loss of use and enjoyment of property, and loss of income rather than specific, traceable injuries to human health, the pressure to reform compensation law has not been as intense at it has been, for example, in Japan, where pollution-related diseases killed or permanently disabled hundreds of citizens.

When government agencies have the authority to require cleanup of pollution, restoration of the natural environment, and replacement of damaged property, this acts as *de facto* compensation and substantially reduces the permanent damage that requires further monetary compensation. Perhaps, therefore, government has failed to give priority to compensation systems because it has viewed any losses remaining uncompensated after such strategies were implemented as a minor aspect of the overall problem. On occasions when government agencies have instituted civil action for compensation for damage to public property and on behalf of injured citizens, they have failed to proceed vigorously.[3] Where the litigation has resulted in the responsible industry's undergoing great expense to change industrial processes, resulting in an end to the discharges of contaminants, the government agency has sometimes considered that the litigation served its purpose without resulting in the recovery of compensation.[4] The attention drawn to the problem by the litigation may have contributed to changes in standards, improved policies and laws to solve problems related to planning procedures, more frequent inspection of premises, monitoring of contaminant levels and migration routes, reporting of incidents, and other precautions. Having identified the problem and taken steps to ensure that it will not recur, government may feel that the marginal utility of pursuing costly litigation to obtain compensation is not warranted.

Government inertia may also be due to concern about possible effects on the economy of potentially limitless liability, the fear of opening "floodgates" of litigation, desire to encourage self-reliance of the public rather than dependence, and concern about the fairness of imposing on industry liability to compensate for damages resulting from accidents beyond the control of the person carrying on the activity out of which the accident arose. However, major incidents such as the mercury pollution of the English-Wabigoon river system, Lake Erie and Lake St. Clair, the Love Canal case, dioxin contamination in Seveso, Italy, the nuclear power plant accident at Three Mile Island, mercury pollution in Iraq and Japan, and the Mississauga train derailment, have caused the question of compensation to become central, rather than the peripheral issue it might have been perceived to be by government.

For the victim of pollution, however, achieving cessation of discharges or cleanup, restoration, or replacement of contaminated environments is not the

end of a pollution incident. Often, this is only the beginning of a protracted and frequently futile struggle to obtain compensation for irreversible damage or permanent losses. An example is the loss of business that an operator of a tourist resort may suffer as a result of polluted lakes and rivers and contaminated fisheries. The operator's loss of custom may be permanent even though the damage to the fishery is not. In addition to the loss of income sustained during years when the catch is contaminated, economic losses may continue indefinitely after discharges cease during the period when the waters are cleansing themselves and as a result of reluctance of guests to return to a location they associate with pollution.

Even though compensation addresses the symptoms of pollution rather than its causes, reform of compensation laws should be considered – if only to bring pollution incidents to a timely and satisfactory conclusion for the victims as well as for government and industry.

2 The Need to Improve Compensation Systems

The perception of a lack of enforcement and of low fines imposed by the courts as a "licence to pollute" is widespread. The failure of traditional forms of regulation to eliminate substantial pollution damage points to the need for better compensation mechanisms, both to act as an additional incentive and to fulfill a role of redress for victims which the regulatory system does not address.

The potential for substantial, widespread pollution-related damage inherent in our reliance on complex technologies and toxic substances can be reduced but is unlikely to be eliminated in an industrial society. If it is recognized that limits to human knowledge are likely to result in unforeseeable consequences regardless of the efficiency of regulatory mechanisms, a logical response to the residual contamination contingency is some provision for compensation. Adequate compensation for pollution victims is primarily a device for indemnifying the public against the adverse effects of pollution that the regulatory system has failed to prevent. It should not be viewed as the best mechanism for regulating the polluter himself and need not be justified on this basis, although it may provide additional deterrence.

It is generally recognized that it would not be fair to allow the harm resulting from pollution-causing activities to fall upon innocent, uninvolved victims when industry or society as a whole reap the benefits. As a general rule, when someone suffers a loss that is not caused by anyone's wrongdoing, the law does nothing to shift the loss. It lies where it falls unless the person subjected to the risk takes steps to spread or shift the loss through insurance. However, in cases where the loss would impose great hardship on the person suffering the harm or where the activity of some other person contributed to the harm, the law usually provides for some form of relief, either through some form of social assistance or by providing a remedy against persons responsible for inflicting the harm.

Redressing injury or harm is an important function of the legal system.[1] Society considers it important to alleviate serious suffering regardless of its cause. However, we distinguish between providing social assistance and righting wrongs. Harm caused by some natural phenomenon, such as a flood or earthquake, by the victim's own activities or assumption of risk, such as a lost wallet or sports injury, or which is unavoidable, is not regarded as a wrong. This does not mean that in all these cases, no assistance is available to the person suffering the loss. In many such cases, we look for relief to various forms of government-sponsored social assistance and to first party insurance (insurance obtained by the injured person).

When an injury results from a wrong, we usually look to the person who caused the harm for redress and attribute legal liability for compensation to that person. As discussed above, there are a number of different bases for attributing liability for pollution-related losses. The most obvious distinction is between quasi-criminal liability and civil liability. Harm that is a quasi-criminal wrong may not be a civil wrong. An injury is often considered a wrong when a person caused it or was in a position to prevent it and did not do so.

There is a middle ground between social assistance and wrongs in which members of the public are required to contribute to the alleviation of suffering that they did not cause by virtue of some special status they share. The workmen's compensation schemes in force through Canada are examples of this type of liability. Government imposes a levy on all employers to maintain a fund to provide compensation, disability benefits, and rehabilitation facilities to employees who are injured on the job or who suffer work-related diseases. In effect, employers are required to contribute to the alleviation of suffering that they may not have caused, by virtue of the fact that they engage in activities, from which they profit, which have the potential to harm innocent persons. The lack of wrong-doing of an employer who has a good safety record is taken into account through lower payments and employers with a poor loss record are penalized by higher payments. Nevertheless, society considers it fairer to impose the burden

of compensation in such a situation on a group of employers, some of whom may have caused no harm, than to spread the burden among all the taxpayers or impose it on the victim.

Our societal values dictate that members of society be treated with concern and respect[2] and that hardship be alleviated. These values suggest strongly that society should make some provision for compensation if someone suffers a loss or injury as a result of pollution. Because people suffer such losses through no fault of their own, are rarely in a position to anticipate the loss or take steps to avoid it, and benefit only indirectly, if at all, from the activities causing the loss, it appears unfair to require them to absorb such losses. This study argues that a just society would identify pollution loss or injury as worthy of protection and would allocate the duty to provide compensation either to the state or to the individual business or group of industries carrying on activities that result in pollution.

In principle, victims of pollution should not have to bear any of the loss for which someone else was responsible. In practice, however, it may be necessary to weigh the size of the loss against the cost of providing compensation. Economic efficiency may dictate that the cost of administering a system to compensate small losses is proportionately high compared to the benefits. While fairness to the victim requires that he be compensated for all inconvenience and anguish he has suffered as a result of pollution, overall social utility may require a limitation of compensation to substantial losses.

Whether pollution-related injuries should be treated as a wrong, however, and responsibility for compensation imposed upon the person carrying on the activity that led to the injury or treated as a question of social assistance is a more difficult issue. The causes of pollution range from blatant disregard of human welfare to circumstances largely beyond the control of the person who profits from handling hazardous substances. Whether responsibility for compensation should be shared or imposed upon persons who deal in hazardous substances raises difficult philosophical and conceptual problems. Ultimately, the allocation of responsibility is a matter of public policy that will be shaped by a variety of considerations, some of which are discussed below.

Regardless of the system chosen, the person who has suffered a substantial loss that he was not in a position to prevent or avoid, through no fault of his own and as a result of the actions of some third party, should not have to undertake expensive legal proceedings or incur great delay to obtain compensation. This principle has been recognized by the establishment in recent years of statutory no-fault automobile insurance schemes,[3] requirements that persons carrying on hazardous business activities provide government agencies with proof of financial responsibility and carry specified amounts of third party liability insurance,[4] government schemes that have been established or are proposed to compensate victims of crime,[5] and workmen's compensation schemes.[6] This principle is reflected in suggestions that persons who are wrongfully accused of crimes and acquitted after a trial be compensated by the state,[7] and in experiments with substitution of restitution, public service, and service to the victim of crime in place of traditional forms of punishment, in sentencing of criminal and quasi-criminal offences.[8] However, such inexpensive, expeditious access to redress is not yet available to victims of pollution in Canada. As will be seen from the discussion below of existing remedies, neither common law civil actions, private insurance, nor recent statutory schemes provide this.

3 Considerations in Designing a Pollution Compensation Scheme

Even if there is general agreement that innocent victims of pollution should be entitled to fast, inexpensive compensation for substantial losses, designing an improved system for delivery of this service entails difficulties. Such a system will probably have as its main objectives two goals: the provision of fair, fast, full compensation and the establishment of a cleaner and safer environment.

In designing the system, these goals must be tempered by other social goals such as general economic welfare, competition policy, the efficiency and cost-effectiveness of the system, efficient resource allocation, and fairness to persons alleged to be responsible for the damage.

Which of the two main goals of the compensation system is given priority will have profound implications for the design of the system and its treatment of these other social goals. Conversely, concern about how compensation systems will affect the realisation of these other goals may have insignificant influence on which of these primary goals is given priority. The importance of this distinction between providing remedial funds to the victim and creating deterrence of pollution lies in the fact that the former goal can be achieved without any need to prove causation or impose responsibility on individual sources of pollution, whereas achievement of the deterrence goal in a manner perceived to be fair and reasonable requires complex, costly procedures for establishing the nexus between a particular loss or injury and specific industrial or business activities.

A compensation scheme may attempt to achieve only the first goal, but it would not be a compensation system if it attempted to achieve only the second goal. The design and operation of a compensation system might be much easier and less expensive if the deterrence goal were abandoned, for then it would not be necessary to make sweeping and fundamental changes to the tort system. All that would be required is a government bureaucracy which collects funds from polluting industries (or is allocated a budget out of government tax revenues), and distributes the funds to claimants in accordance with a set of rules or guidelines. The fund might even have a degree of deterrence if the levies imposed on an industry or on individual companies in it were related to the size and number of claims attributable to them.

This approach to compensation has been advocated by Professor Ison in several publications.[1] Professors Reuben and Hasson of Osgoode Hall Law School have argued that the advantages of such a system outweigh the merits of attempts to retain a large degree of deterrence by allocating the costs of pollution damages directly to individual actors. Advocates of this approach believe that by moving compensation from the realm of private law to public law, many problems and costs will be reduced. Control of the system by government and cost to government are not likely to be substantially increased by transferring the administration of the system from one government agency – the court system and the judiciary – to another. The extensive and expensive role of private insurance companies and lawyers, and their degree of control over the compensation process, would be reduced.

The deterrence function of the tort system is an illusion in any event, according to these commentators. They point to a lack of evidence that potential civil liability actually deters any one from intended activities. For example, they argue that the threat of being prosecuted and fined appears to have much greater value in deterring careless driving and breach of highway traffic laws than does the possibility of higher insurance premiums. Deterrance is best left to the criminal law and to other regulatory mechanisms.

Taking this reasoning to a logical conclusion, they argue that the best compensation system is a universal one which covers all forms of accident, injury, illness and disability without regard to how or where it occurred or through whose fault. The savings incurred by foregoing the expensive inquiry into causation and liability could be passed onto the person in need of relief, and the victim would be spared the time required to process claims.

In light of this possibility of removing compensation of pollution victims completely from the field of private law, this study could be considered deficient in that it fails to study in depth such schemes as unemployment insurance, workmen's compensation, the Canada Pension Plan, and the New Zealand accident compensation scheme as comprehensive alternatives to using the courts. Instead, I have chosen to attempt to reconcile the two competing goals of compensation and deterrence.

To some extent, the deterrence value of civil liability remains an unproven hypothesis. A deterrent will only be effective when actors believe the cost of non-compliance will be greater than the cost of compliance. Only then will they alter their economic behaviour. We do not know for certain that we can design a system that will make liability to pay compensation so likely that the polluter will spend his money on pollution prevention rather than risk liability. But the hypothesis that it is impossible to provide a high degree of deterrence through a compensation system is also unproven. Therefore, attempting to retain the goal of deterrence value of present and future compensation systems is a worthwhile goal.

The universal social assistance model proposed by Ison and others is very seductive. Nevertheless, I am concerned about giving the executive branch of government this much power over victims of pollution. Bureaucrats can never hope to achieve the degree of independence from the executive branch of government that is inherent in the structure of the judiciary. Claimants tend to come before the courts as equals with their adversaries, but tend to come before other bureaucracies as supplicants.

Government-run social assistance programs have been far from trouble-free. The Ontario Workmen's Compensation system, for example, has been described as the best in the world, yet it has been the centre of a perpetual storm for over a decade because workers feel they are being short-changed by it. Ontario's Ombudsman has had to set up an entire section to handle complaints about workmen's compensation.

Nor will integrating a variety of government-run compensation schemes into one comprehensive scheme necessarily result in fair recoveries for pollution victims, because, if their interests should conflict with those of other recipient groups, victims of pollution might well lose out. Victims of pollution are unlikely to be a large or cohesive group able to form an effective lobby except when they are all victims of the same incident, such as the Mississauga derailment, the Love Canal contamination, or the Three Mile Island breakdown.

There are also political barriers to the implementation of a government-run scheme that spreads the risk and dilutes individual liability for compensation. These obstacles are no less formidable than the barriers to reform of the torts system. Insurers and the legal profession are likely to oppose any system that results in loss of revenue for them. Industry will do its utmost to reduce its liability for taxes or levies, by attempting to keep down the levels of benefits payable. The same arguments about the need for fault and equity will be raised by industries – in the context of allocating the costs of the system among large and small companies, wealthy and poor industries, and "clean" and "dirty" companies – as would arise in reforming the basis of tort liability.

Finally, I would be reluctant to see liability for pollution diluted to the point where the levy on individual polluters becomes merely an inexpensive "licence to pollute." This can be a major step towards reinstating and legitimizing the idea that causing injury through pollution is an acceptable practice, and towards rendering individual sources of pollution "invisible." Any compensation system that foregoes the goal of deterrence could mean a serious regression in corporate social responsibility for pollution control and abatement.

For these reasons, and also because in the field of compensation of pollution victims, new compensation systems have usually attempted to achieve both alleviation of suffering or loss and deterrence, this study will pursue both goals. I will assume that the salient question for decision-makers will be which of the two goals will be given priority.

Social philosophy and public policy will play a large part in determining the choice of priorities and their method of implementation. Public perception of pollution either as a natural and inevitable by-product of industrial activity or as a "wrong" will have a bearing upon who is considered to bear moral responsibility for pollution. This in turn will affect the allocation of legal and economic responsibility for compensation. Finally, the acceptability of various alternatives to powerful sectors of society will play a role in the design of a compensation system. Experience has indicated that large corporations are sometimes in a position to resist the successful implementation of compensation schemes and other aspects of pollution control they consider unacceptable.

Goals for a Compensation System

Fast, Full and Fair Compensation as the Primary Goal

From the point of view of the person suffering some loss or injury as a result of pollution, the point of a compensation system is to put him back in the same position as he was before the incident, as nearly as monetary compensation can do so. He may also have a desire for retribution or vengeance – a desire to "punish" the polluter for the harm he has caused – but this desire is likely to be much less important to him than his desire for full, timely compensation.[2] Except in cases of extremely serious, lasting damage or great culpability, adequate compensation may largely satisfy the taste for rebribution. From the victim's point of view, it does not matter who pays the compensation, nor is the deterrence value of a requirement to compensate of great concern to him in his capacity as loss-sufferer.

As mentioned above, it is possible to treat a pollution damage compensation system as having only one goal, the alleviation of the suffering of the pollution victim and redress of his loss. If this approach is taken, other regulatory tools bear the burden of preventing pollution and mitigating its effects. This approach treats compensation as a residual need resulting from the failure of the regulatory system to prevent damage rather than an integral part of the regulatory system. This single goal can be achieved by payments from governments, from the person or persons responsible for the damage, or from any combination of government and industry. Entitlement to compensation would focus on the victim's harm rather than the culpability of the person causing the harm. Proof of harm and the fact that the harm was caused by a contaminant could be sufficient justification for awarding compensation without identifying the source, proving causation, or establishing the legal liability of a particular source. To the extent that this approach renders entitlement to compensation independent of establishing the liability of a particular source, a system may be designed which eliminates many of the present barriers to compensation by eliminating the adversarial system and its stringent proof requirements, procedural complexities, delay and cost.

This independence of compensation from proof of causation, however, can be achieved only when payments are made out of a fund based on general government revenues or contributions, whether voluntary or compulsory, from a wide spectrum of polluting companies. Such diffused responsibility for payment diffuses responsibility for the adverse effects of polluting activities. It cannot provide the degree of deterrence or efficient resource allocation that a compensation system provides in which the polluter is directly responsible for compensation.

This kind of social assistance approach has the merit of simplicity, administrative efficiency, and cost effectiveness.

It is attractive, for example, when it would be undesirable to increase levies against a particular company on the basis of claims. For example, while it might appear superficially beneficial to increase the amount of the levy an employer pays into a workmen's compensation scheme on the basis of claims made by his employees, this might result in deterring claims by employees rather than deterring unsafe practices by the employer.[3] The employee, who is in a vulnerable position, may be subjected to subtle pressure not to institute claims, or the employer may focus expenditures on such matters as lighting to avoid accidents while ignoring the presence of contaminants resulting in chronic illness.

The public policy argument in support of the single-goal system is that everyone benefits from the advantages of a highly industrialized society, a by-product of which is some inevitable pollution, and therefore everyone should share the cost of compensation.[4]

However, there are also a number of arguments against a system in which payment of compensation is divorced from causation or fault. If government and/or industry as a whole provide the compensation, many industry representatives would argue that careful companies that take pains to avoid causing harm are subsidizing the activities of operators who choose not to be so responsible.[5] Thus, industry may consider that it is paying for its competitor's pollution through its taxes and contributions to the fund. Environmentalists would argue that while everyone benefits from industrial activities to a greater or lesser extent, no one benefits from pollution per se. They would argue that public policy should require the person who stands to benefit most directly from pollution activities to provide compensation – the "polluter pays" principle.[6] If government pays, there will also be a tendency to solve the problem of insufficient revenues to provide fully for all competing needs of society by placing limits on the kinds of losses covered by the fund or on the amounts of compensation payable.[7] Other limitations of this kind of system include the possibility of excessive discretion in the administering agency and possible lack of procedural safeguards.[8] Care must be taken to avoid bureaucratic structural defects resulting in delay or a feeling of powerlessness by claimants; for example, a lack of information disclosure, excessive centralization, and fragmentation of claims handling functions

so that different aspects of a single claim are handled by different people, many of whom may not be in direct contact with the claimant or in communication with each other.

When industry as a whole has contributed to a compensation fund, as in the case of workmen's compensation and the Japanese pollution compensation system, pressure from industry representatives has also resulted in limitations on the kinds and amounts of compensation available.[9] Such a system of shared industry responsibility may provide some degree of deterrence or incentive to avoid spills or discharges. The deterrent effect will be present to the extent that avoidance of pollution will result in lower taxes, decreases in assessed contribution to the fund, or differential levels of contribution between companies with a poor accident or loss experience and those with a good record. However, substantial deterrence is unlikely unless these savings are equal to or greater than the cost of steps to avoid pollution-related damage. Such indirect levies or taxes are therefore sometimes considered "licences to pollute."[10]

Such systems do have the advantage, in addition to other advantages discussed above, of assuring availability of funds. In a system based on private insurance and litigation, this is uncertain even in the event of successful action, should the defendant have insufficient assets or insurance to cover damages awarded against him.

The introduction of deterrence even as a secondary goal of the compensation system creates a new level of complexity. Assuming that assistance to the victim is still the primary goal, achievement of this goal will suffer to the extent that establishing a claim is dependent upon establishing a nexus between one's loss and a specific activity. The deterrence goal makes it necessary to formulate rules for distinguishing between situations in which deterrence would be furthered by making the polluter directly responsible for payments and situations in which imposition of direct liability will serve no deterrent purpose or where the goal of deterrence should give way to some competing social goal, such as avoidance of undue hardship on a particular company or on the economy of a particular region. It will also be necessary to ensure that the primary goal of assisting victims is not sacrificed as a result of the requirement to prove a case against a specific person. To assure this order of priorities, such a system could be based on the establishment of an entitlement of victims to compensation from some general fund and make establishment of liability of specific persons a separate function. The victim or the agency responsible for paying compensation would not be required to establish a person's legal liability for pollution as a prerequisite to entitlement of the victim to compensation. The attempt to establish causation and legal liability would be separate from and subsequent to meeting the victim's needs.

Such a system would probably have to contain many of the following elements:

- A fund into which payments are made either by the taxpayers as a whole or by classes of industry designated to make payments would have to be set up. Classes would be designated on the basis of some combination of criteria such as quantity of contaminants handled, degree of danger associated with the contaminant handled, revenues earned as a result of dealing in contaminants, or loss experience.

- To achieve the primary goal of assistance to victims, the victim should have the opportunity to recover some part or all of his losses from the fund on the basis of evidence of his loss and of its causation by pollution. The victim should not have to identify the pollution source or confront the person allegedly responsible in any form of adversarial process.

- Although it would seldom be used, the victim should retain the right to sue in the courts as an alternative to applying to the fund.

- Any decision of the fund should be appealable to the courts and the procedures of the funding agency should be subject to judicial review on grounds such as jurisdictional defects, fairness or natural justice.

- If the amount of compensation available from the fund or the kinds of damages recoverable from the fund are restricted by the terms of reference of the fund or by insufficient accumulations in the fund, the victim should retain the right to sue anyone alleged responsible at law for his loss directly. In such a suit, the victim should have the right to recover any damages not recoverable from the fund that would have been recoverable on the basis of common law or statutory rights.

- To achieve the deterrent goal, the administrators of the fund should have the authority, and perhaps even a duty, to sue the person alleged responsible on the basis of existing common law or statutory legal liability to recover payments made out of the fund.

- To enhance the effectiveness of deterrence, it may also be advisable to make adjustments to the current common law regime to broaden the circumstances under which persons in control of pollutants are liable for compensation in the event of accidents or harmful discharges. Such adjustments may include the repeal of certain defences, broader availability of class actions, shifting the burden of proving certain

matters from the plaintiff to the defendant, relaxation of evidentiary rules (for example, allowing admission of statistical and epidemiological evidence as proof of causation), widening the scope of damages available to the plaintiff, and introducing methods of measuring damages which are simpler than present ones and which give greater recognition to non-material injuries and to the importance of ecological stability.

- All of the above comments may be tempered by competing social goals such as procedural safeguards, protection of the civil liberties of the person alleged responsible for pollution damage, protection of domestic industry from requirements that may give an unfair advantage to foreign industry not subject to similar requirements, protection of small and medium-sized industries against requirements beyond their capacity to meet, and general economic welfare. In short, the compensation system must incorporate techniques for recognizing potential or actual effects which result in undue hardship and ameliorating them, probably on a case-by-case basis.

Deterrence as the Primary Goal

A compensation system whose primary goal is assistance to those who suffer losses rather than the creation of a cleaner, safer environment, focuses on the symptoms of pollution rather than the causes. This might be justified on the basis that other regulatory instruments are better designed to achieve pollution abatement goals. Reversing the priorities so that the primary objective of the system is to provide a financial incentive to industry to take greater care to avoid inflicting losses on others puts barriers in the way of achieving the assistance objective. If this incentive or deterrent goal is to be achieved, it becomes essential to undertake the additional step of investigating causation and culpability of individual sources of pollution and allocating blame or responsibility among a number of potential actors, such as the producer, the carrier, the person who uses a contaminant in the production of some finished product, and the wholesaler and retailer. This would be necessary even in cases where no negligence in the traditional sense may attach to any of them. The deterrence goal requires the entrenchment of new concepts of legal responsibility for harm or the extension of existing concepts of narrow application (for example, the rule in *Rylands v. Fletcher*[11]) to a broader range of cases. It may also mean making new distinctions between degrees of responsibility, for example, increasing the sharing of responsibility among a greater number of potentially liable persons through development of joint and several liability.

As mentioned above, because of the need to allocate responsibility to individual sources of pollution if deterrence is to be achieved, the goal of compensating victims may suffer unless the system is designed to ensure that these functions are independent from each other. In other words, if deterrence is the primary objective, there is a danger that the victim will not be in a position to recover as a result of the need for him to identify sources of pollutants, establish causation, and prove culpability to recover damages. If this burden of proof remains on the victim, it will be impossible to obtain compensation in a timely manner. Thus, society's need to link damage and source in order to create an effective deterrent should be met by government agencies, not by the innocent victim. A system which places priority on the deterrent function of compensation should have three major components if it is to avoid sacrificing the victim's moral right to timely compensation with a minimum of psychological stress, uncertainty, and cost:

- The victim should be able to recover either from a fund or from one or more of the persons in control of the contaminant through some simple, expeditious procedure. In this respect, the requirements of a system giving deterrence priority over assistance would be similar to the system giving assistance priority as described above.

- As it is the public as a whole that benefits from the deterrence function of the compensation system, rather than the victim of an individual spill or incident, government, not the victim, should have responsibility for proving whatever nexus is necessary to recover payments to the victim from the person alleged responsible for the harm. In this respect also, a system in which deterrence is primary would be similar to one in which assistance is given priority.

- Unlike the previous ordering of priorities, it will be *necessary* rather than optional to impose much greater liability on persons carrying on business involving the creation, use, transportation, or disposal of pollutants than the present common law system entails. This statement is based upon the author's assumption that the present common law compensation system provides insufficient deterrence.

The Basis for a Deterrent System of Compensation

Pollution-related losses frequently occur in the absence of negligence. Harm may occur despite the fact that a person carrying on a business involving pollutants complied with the standard of care prevalent throughout the industry, exercised due diligence, took all reasonable precautions to avoid causing harm, or was unable to foresee the adverse effects of

his activities. In many cases, the adverse effects of a substance on the environment or on human health may have been unknown at the time of the activity. Furthermore, harm may occur through combination of the one substance with a second substance over which the first proprietor had no control. He may have had no knowledge of the existence of the second substance. (This phenomenon is known as synergism; an example is the combination of nitrates in bacon and amines in coffee to form carcinogenic nitrosamines in the humam stomach.) In other cases, the harm may be caused by the intentional or negligent act of some third party or by an act of God. The complained-of-activity may have been considered socially acceptable at the time that it was undertaken, (for example, the dumping of toxic wastes in unsupervised, unprotected garbage dumps up until the early 1970s) but may have become unacceptable after it was completed or after a large investment had been made in an operation, as a result of changing attitudes, technological advances, or new knowledge of consequences.

In such cases, industry representatives argue that the person causing or contributing to loss or harm by his use of the contaminant is as innocent as the victim of pollution. In such cases, which appear to be a substantial portion of injurious activities, industry spokespersons suggest that equity requires that government or industry as a whole should pay compensation.[12] This is a viable approach if assistance to victims is the only goal or the primary goal of the compensation system. This approach is unacceptable to many environmentalists, however, because they feel it implies that pollution is acceptable as long as government ensures that no individual suffers unduly from it.[13] Critical reaction of the mass media to initiatives by government agencies to shelter polluting companies from responsibility for compensation also appears to indicate a degree of popular consensus that "the polluter should pay."

A system of compensation which emphasizes deterrence cannot accept this view of liability. Its approach would be to treat compensation as an integral part of a pollution control strategy whose overall purpose is the achievement of the cleanest, safest environment consistent with general economic welfare. The primary test of the effectiveness of such a compensation system, therefore, would be whether it contributes to prevention of pollution. Full, fast, and fair compensation would be subordinate to this goal. The system would start from the premise that while society clearly benefits from the availability of toxic substances, the business which stands to profit from dealing in them benefits much more directly and should bear responsibility for the risk it creates. Those who believe that the owners and handlers should be directly responsible for compensation regardless of fault feel that this will serve two purposes. First, it will result in greater deterrence than a more diffuse responsibility for compensation. Secondly, if industry were clearly responsible, companies would settle quickly with persons harmed, as it would be less expensive to pay than to fight. Thus the compensation or assistance goal would also be achieved.[14]

The argument in favour of placing clear responsibility for compensation on individual owners and handlers of contaminants has a number of rationales.

The Deterrence Argument — According to Dewees (1979),[15] deterrence from causing pollution results when failure to control pollution is made more expensive than controlling it. He states that economists have pointed out that direct regulatory policies widely used in Canada do not impose significant costs on those who fail to comply with pollution control orders. Liability for compensation can supplement these traditional regulatory techniques and raise the cost of non-compliance. For compensation liability to serve this function does not require that it be tied to the polluter's fault, knowledge, or intent. The owner or handler of toxic substances who has taken reasonable precautions to avoid pollution, it can be argued, would take even greater precautions if he knew he would be liable for all consequences of his activities. The manufacturers and handlers of dangerous goods are in a position to design containers, packaging, and vehicles; to choose the timing, method, and route of transportation; to choose between the use of more dangerous ingredients and manufacturing processes; and to take other actions to prevent spills or emissions. Acts of God, for example, are accidents or events that happen independently of human intervention and are due to natural causes, such as a storm or earthquake; however, this does not necessarily imply, as industry has suggested, that their adverse consequences cannot be prevented or mitigated by more stringent design standards and precautions. Firms are not in a position to prevent acts of God and are not therefore considered liable for compensation at common law for damage resulting from them. However, given the incentive to prevent damage that acts of God may cause that would be created by withdrawing their immunity from paying compensation for such damage, industry might take greater precautions. Acts of God are frequently conditions industry has chosen, because of cost considerations, not to take into account in designing its equipment or locating its plant. Making them responsible for compensation arising out of failure to design to contain the consequences of acts of God, which are

foreseeable events, would serve as deterrence to imposing these risks on the general public. Similarly, while firms do not cause harm resulting from illegal acts of strangers, such as theft of toxic substances, they are in the best position to institute security measures to minimize the possibility of such occurrences, and perhaps should be accountable for any harm arising out of their failure to do so.

The deterrence argument has limitations. Some pollution incidents or their consequences are so nearly unavoidable or so divorced from any activity attributable to the owner or handler that liability for compensation would provide no deterrence. Possible cases might include damage resulting from certain kinds of acts of God of a particularly irresistable or unusual nature, such as an earthquake of unprecedented intensity or a tidal wave, acts of war, civil war, terrorism, or intentional criminal acts of others. The relevant distinction with regard to deterrence may not be the traditional distinction between negligence and lack of fault; reasonableness and unreasonableness; or causation and lack of causation. The appropriate distinction in designing a new compensation system may be whether or not the person alleged to be responsible for compensation could have done anything to avoid or prevent the damage. A second, related, distinction is between unexpected accidents and routine emissions or discharges. Generally, routine emissions are conscious business decisions and are more directly within the control of the person causing them than accidental spills. Persons who choose to pollute as a normal method of operation should perhaps have a greater degree of responsibility for harm caused by their emissions than those who pollute as a result of accidents out of the ordinary course of events.

Imposing liability for damage that a person could not avoid has no deterrent or incentive value and may, in the absence of other considerations, be unfair. In the case of unavoidable damage, therefore, the appropriate source of compensation may be government or industry as a whole unless other grounds for attribution of liability to the individual firm are relied on rather than deterrence, such as the principle that a person who stands to profit from use of a contaminant should be responsible for all risks associated with his activities or the principle that producers of pollutants should be responsible for all of their foreseeable and unforeseeable effects from "cradle to grave"; that is, from discovery or invention of the substance through various uses to its final disposal in the form of waste.

The Moral Argument — This kind of rationale for imposing liability even when it may not result in deterrence might be described as the moral argument in favour of allocating loss to individual firms. Persons in the business of manufacturing, storing, transporting, and selling pollutants create the risk of harm and stand to profit from the activities creating this risk. As the risk of pollution is inherent in their business, such persons should bear responsibility to ensure that no harm comes to the public as a result of their activities. The argument is that those who process contaminants for profit have the choice whether to do so and in what manner. Therefore, they voluntarily assume any risks associated with the production or use of the contaminant. Making the person who extracted or manufactured the toxic substance responsible for it from cradle to grave recognizes this responsibility. The responsibility, however, may not be exclusive to the originator of the substance, but may be shared with all subsequent processors, wholesalers, retailers, and operators of waste disposal sites accepting the substance. Everyone who shares the risk and stands to profit would share responsibility for avoiding causing pollution, taking emergency measures to avoid and mitigate harm if a pollution incident occurs, taking remedial measures to clean up the pollutant and restore any affected part of the environment or property, and compensating for permanent loss or disability. With respect to compensation, for example, each of them would be jointly and severally liable initially to the victim. As between them, however, they could allocate responsibility and recover monies paid to the victim in accordance with traditional principles of indemnification. Thus, the cost of compensation would ultimately be shared by the actors in accordance with degree of fault, nuisance principles, or contractual arrangements.

The principle that those who seek to profit from business activities should accept all risk associated with them implies that companies with insufficient assets or insurance should not undertake hazardous activities or, if a risk is uninsurable, the activity should not be carried on. The principle is a significant departure from common law and is open to a number of criticisms: that it inhibits competition and results in oligopoly or monopoly, as only very large firms could afford to engage in many hazardous activities; that some essential or very important activities such as ensuring an adequate supply of critical goods and services could not be carried on (government insurance of risks of radioactive contamination from nuclear power plants is one example of an uninsurable activity considered worthy of public support and subsidization); that the relative extent and severity of the injury suffered may be either disproportionately large or disproportionately small in comparison with the culpability of the act causing them; that such

liability would discourage socially useful activities and initiative; that liability would create a temptation and opportunity for the manufacture of collusive and fraudulent claims; that the plaintiff can often obtain insurance against business interruption and other harms as easily as the defendant; and that causation problems increase dramatically with the remoteness or lack of foreseeability of an injury.[16]

If this enlarged concept of liability is accepted, therefore, it may be necessary to temper it with modifications and exceptions to create a balance between protection of the victim and protection of industry. This may be accomplished in a variety of ways. These might include limitation of liability for compensation in cases where effective competition appears to require it; provision for government assistance to firms in the event that their compensation liability becomes so great it would cause them to cease or curtail operations; provision of insurance by a government agency if private insurance is not available; supplementation of private insurance with government funds; or government orders requiring all operators within an industry to insure their third party liability to specified limits, in order to create a sufficiently large market that insurers could provide coverage at affordable premiums.

If deterrence is a primary goal, however, such strategies should be applied selectively and only on evidence that they are necessary to further some other social goal, such as general economic welfare, employment, competition policy, or ensuring an adequate supply of critical services. The policy should be to respond to real needs rather than to arbitrarily curtail recovery on the basis of imagined or anticipated problems that may not occur.

The "Deep Pocket" Argument — Firms in the business of producing, handling, or selling toxic substances are likely to have the resources to provide compensation for most pollution-related losses. As between government and industry, government has larger financial resources, but also a larger number of competing demands on its resources. Relatively, individual firms may be, in many cases, in as good a position to absorb the loss as the taxpaying public.

As between the individual firm and the victim of pollution, it seems a safe assumption that the firm is usually in a better position to assume the loss than the victim. Cases may be envisioned in which this is not true. An individual whose business is hauling waste and who owns only one truck may spill a load of hazardous waste outside the mansion of a wealthy industrialist. However, the degree of corporate concentration in Canada is evidence that business generally is carried out by corporations sufficiently wealthy to be in better position to pay than the victim of pollution. Adjustments may have to be made in exceptional circumstances where unusually large losses result or a firm is unable to bear the entire burden of compensation.

The Loss Redistribution Argument — This argument is closely related to the "deep pocket" argument. The assumption is that the firm initially liable to pay third party compensation will not ultimately bear the entire cost. The firm will usually be in a position to redistribute the loss to one or more of the following: to other tortfeasors, to insurers, to consumers, to shareholders, to suppliers, contractors, and employees through adjustments in the costs of production, material or labour, and to the government through various forms of tax relief.[17]

The Resource Allocation Argument — The prevalent view of market economists in recent years has been that pollution damage is a cost of production and that efficiency of resource allocation requires that a value be put on this damage and the cost "internalized" (sometimes described as "total costing").[18] Various methods of doing this have been suggested, such as selling pollution rights and charging effluent fees.[19] Such market-oriented mechanisms have obtained little public acceptance for reasons described by Dewees.[20]

However, allocating the cost of compensation losses caused by their activities to individual firms is unlikely to meet such resistance, as it cannot be perceived, as are these other mechanisms, as "licences to pollute."

To the extent that compensation is not paid by individual firms and losses fall upon the victim, the taxpayer, or industry as a whole, they are not internalized and do not meet the economists' criteria for efficient resource allocation. It is suggested that unless allocating compensation payment to individual firms is perceived to result in closure of firms, unemployment of workers, or other serious adverse economic impacts, the "polluter pays" approach would have widespread public acceptance.

Competition and Free Enterprise — One observer has suggested that industrialists are free-enterprisers with respect to sharing wealth, but socialists when it comes to sharing losses.[21] This is borne out by the reaction of various sectors of industry when attempts have been made to expand their liability for compensation. Their reaction has been that, since everyone benefits from industrial activities, everyone should share the cost of compensation, and it should therefore be paid by government.

However, allocation of compensation liability to individual firms appears to be consistent with the principles of free enterprise as it is generally in the

interest of maintaining competition nationally and internationally and of maintaining a free market price. Under some circumstances, discussed below, it is possible that imposition of this liability could interfere with fair competition. However, on the whole the opposite appears to be true.

If government were to absorb compensation costs or the costs were to be spread among categories of industries creating a particular risk through compulsory levies, this would not only result in higher taxation but also would contemplate some degree of subsidization of "polluting" industries by "clean" industries and some government intervention into the affairs of business concerns.

The "polluter pays" principle has been adopted as policy by the Organisation for Economic Co-operation and Development,[22] of which Canada is a member nation and subsequently has been adopted as internal policy in countries such as Canada[23] and Japan.[24] The reason given by OECD for placing primary responsibility for financing pollution control efforts on individual firms is the maintenance of international competition on an equitable basis. This would not be achieved if some member governments were to subsidize their industries pollution abatement activities, giving these industries an unfair advantage over unsubsidized industries in other nations. The same reasoning can be applied to the goal of preventing establishment of "pollution havens" within Canada. Provided, therefore, that all jurisdictions within a market impose responsibility for compensation upon their firms, there need be no interference with competition.

Other Social Goals

Achievement of the two primary goals of assistance and deterrence may be tempered by competing social goals and power relationships. The extent to which the goals of the compensation system can be achieved without unduly hindering achievement of these other objectives is largely unknown and will have to be ascertained through experience. With one exception – government loans to the Chisso Corporation in Japan to assist the many victims of mercury pollution,[25] the author has been unable to find any evidence to support the concern expressed by representatives of industry that greater liability for compensation will impose hardship on the public or on individual companies or industrial sectors. On the other hand, there is evidence that the lack of any expeditious method of resolving conflicts over compensation has caused substantial hardship to many pollution victims in a number of jurisdictions.[26] The following social goals may temper the primary goals.

General Economic Welfare

General economic welfare considerations include: employment, productivity, inflation, distribution of costs and benefits to various sectors of society, the investment climate, and the maintenance of competition. The impact of a compensation scheme on the economy can be identified through knowledge of the costs and benefits of that particular system, and how these costs and benefits are initially distributed and ultimately redistributed throughout society.

Generalizations are not useful. Analysis would have to be done on a case-by-case basis. Moreover, judgments about the effects of a pollution-related compensation system on general economic welfare would have to be based on the measurement of the benefits to those who receive compensation and an analysis of the benefits of a reduction in pollution incidents resulting from the deterrent effect of the scheme's existence as well as an analysis of the cost to those liable for compensation.

Information as to the overall costs and benefits of the main existing compensation mechanism, the common law tort system and insurance does not appear to be available. Information that is available about the costs of administering statutory schemes in Canada and payments to pollution victims through these schemes seems to indicate they have had little impact on the overall economy.

As the costs and benefits of compensation schemes are largely unknown and speculative, their potential impact on the general economy can be estimated only with great caution. Perhaps the best that can be done at this time is to proceed by way of analogy to the costs and benefits resulting from other pollution control mechanisms and their impact on the general welfare.

Various estimates have been made of the cost of pollution-related personal injuries, environmental harm, and property damage from single sources and multiple sources in various jurisdictions. A 1974 report prepared for Environment Canada estimated health costs, damage to materials, property devaluations, and vegetation damage from industrial sulphur dioxide emissions in the Sudbury, Ontario area as $465.9 million a year, using 1972 dollars.[27] Zerbe[28] estimated the dollar cost of twenty-five separate kinds of air pollution-related illnesses and harm to property for Canada, Ontario, and Toronto. He concluded, for example, that air pollution caused $477 million damage for Ontario in 1965, or $70.94 per capita. Zerbe predicted a total of $11.1 billion in injury and damage, or $1,257 per capita, in Ontario between 1969 and 1980. For the year 1980, he estimated Ontario injury and damage at $1.98 billion

or $156.78 per capita. He used 1969 dollars at a discount rate of 4 per cent for all calculations.

Bates[29] estimated Canadian mortality and morbidity costs as a result of air pollution related disease to be between $49.76 million and $189 million per year. Stern[30] forecast economic losses from air pollution in the United States in 1977 at $400 billion, while the U.S. Environmental Protection Agency estimated the loss for the same year to be $25 billion.

Estimates of the costs associated with individual pollution incidents are also available. A 1977 train derailment in Gulford, Indiana, which released 34,000 gallons of acrylonitrile into surface and ground waters resulted in over $1 million in cleanup costs.[31] A 1977 derailment in White Rock, Texas, in which propane and isobutane ignited, caused five injuries and an estimated $4 million in property damage.[32] Economic losses resulting from a seven-day evacuation of Mississauga, Ontario, in November 1979 have been estimated at a minimum of $25 million a day.[33] The entire city of 240,000 people was evacuated when a derailment of a train carrying propane and chlorine resulted in a fire. The fire created a danger of release of toxic chlorine gas into the heavily populated area.

Studies of the cost of pollution abatement and their incidence are also available. Using figures supplied by the U.S. Environmental Protection Agency and the President's Council on Environment Quality, Dorfman and Snow[34] estimated that the Federal pollution control legislation enacted in the United States up to the end of 1972 will impose an additional gross burden on the economy of over $26 billion a year or an average of $353.00 per family. The study assumed that most of the costs incurred by industry or government initially would be passed on respectively to consumers and taxpayers in the form of higher prices and higher taxes. The study concluded that where cost increases fell initially on primary industries, their ultimate effect would be dispersed among a broad spectrum of final products without important price effects on any single consumption category and that to a lesser extent diversification of large corporations would also spread the price increases among the broad spectrum of final products even with regard to secondary manufacturing. Pollution control costs borne initially by private industry would generally be widely dispersed among consumption items resulting in relatively small price increases. Therefore, the ultimate incidence of pollution control would be allocated among income groups in accordance with their consumption patterns. Resembling a consumption tax or general sales tax, it would have a similar degree of regressivity.

A 1978 report prepared for the U.S. Environment Protection Agency estimated the cost to U.S. government of its involvement in cleaning up spills of chemicals at between $6.5 million and $26.1 million a year.[35] This would be only a small fraction of the cost associated with the spill, as the estimate did not include the cost to private industry (which performs 90 per cent of the remedial work), administrative costs, long-term environmental restoration, third party damages, evacuation and public safety costs, or damages from abandoned waste disposal sites and some deliberate dumping of hazardous chemicals.

Hart[36] estimated the cost of cleaning up an estimated 500 to 850 abandoned hazardous waste sites in the United States at an average of $25.9 million per site. The U.S. Environmental Protection Agency has also estimated the cost of decontaminating the bed of the Upper Hudson River by dredging to range between $30 million and $250 million and a similar program for the James River as $1 billion to $7 billion.[37]

Donnan[38] has attempted to approximate cost of pollution controls in a number of ways. For example, he found that the value of waterworks and sewage treatment plants constructed in 1976 was 4.1 per cent of the value of all construction in Canada in that year. The budgets of provincial pollution control agencies for fiscal year 1975-76 ranged from a high of 1.98 per cent of the total provincial budget in Ontario to a low of 0.11 per cent in Newfoundland.

The benefits of pollution abatement programs are more difficult to model than the costs, because economists have not developed the tools to put a dollar value on many aspects of the quality of life enhanced by pollution control. Nevertheless, a number of attempts have been made to measure the benefits of pollution abatement programs. Lave and Seskin[39] projected that the costs of existing U.S. programs to control sulphur oxide and particulate emissions from stationary sources would be $9.5 billion in 1979, and the benefits in terms of improved health would be about $16.1 billion. Ben-Shaul et al[40] estimate that present levels of decrease in particulates in the United States as a result of pollution control programs created a national benefit of over $8 billion annually, including more time-on-the-job and increased productivity of people suffering from illnesses associated with air pollution. The 1977 cost of the national air pollution abatement program was $6.7 billion. They projected that reduction in particulate matter would achieve $40 billion in benefits from decreased illnesses and mortality. Economic benefits also would include a thriving industry constructing,

manufacturing, maintaining, and operating pollution control facilities.

A 1979 study done by the U.S. Environmental Protection Agency showed that the stimulating effects on the U.S. economy of spending for pollution control equipment has raised the gross national product slightly, while slightly lowering the rate of activity, resulting by 1982 in a lower GNP than would be expected without pollution control expenditures.[41] Pollution control investments amounted to $6.9 billion in 1977 and 5.1 per cent of industrial plant and equipment investment.

Various studies have indicated that the net effect of pollution abatement programs on employment is close to zero.[42] In the United States plant closings and reduction in demand are offset by new employment in the pollution control industry. The OECD[43] found that in the short-run environmental programs had created at least as many jobs as they destroyed, and increased the number of jobs available in a number of countries. Donnan states that he knows of no factory closures in Ontario brought about "solely by inflexible enforcement of pollution abatement standards or guidelines."[44]

The U.S. Environmental Protection Agency studied the inflationary effects of the U.S. federal pollution control program as measured by changes in the Consumer Price Index and on the GNP.[45] Its study shows that the CPI and the Wholesale Price Index increase from 1970 to 1986 at an average of 0.2 per cent to 0.3 percentage points higher for the CPI and 0.3 per cent points higher for the WPI as a result of pollution control spending required by federal law. Thus, if the CPI were to increase 6.0 per cent in a particular year without pollution controls, it might increase 6.3 per cent without them.

Industry representatives frequently express concern that pollution abatement costs will make firms subject to them less competitive in their market than firms in jurisdictions that do not impose such costs on industry.[46] They fear that these costs will adversely affect the investment climate in jurisdictions that impose the costs on their industry. A number of reports have indicated no adverse results to competitive position from pollution abatement costs. Donnan did simulation tests imposing pollution abatement costs on the pulp and paper industry. His econometric studies show that "Ontario pulp and paper industry producers would not lose their market shares as long as similar magnitudes of abatement costs are incurred throughout the rest of North America *and there is every indication that this is happening*[47] (emphasis added).

The Stanford Research Institute[48] found that, assuming costs are passed on to prices, capital investment by the steel industry in the United States to comply with environmental health regulations is not expected substantially to effect additions to capacity. Donnan notes that, in the November 1977 report of the Conference Board in Canada, pollution abatement expenditures and occupational health and safety costs are not even mentioned, let alone identified as a determinant of Canada's competitive position.[49]

The findings of these studies must be used with caution. Their authors frequently admit that the studies are imprecise, that they are based on assumptions that cannot be proven or on untested methodology. The measurement of the costs and benefits of environmental protection is in its infancy. Many benefits of pollution control are intangible or remote in time and it is difficult to place a dollar value on them. The cause-and-effect relationships between discharge of pollutants and environmental changes and human health are largely unknown.

To the extent that the available studies are reliable, they appear to indicate the following. The extent of pollution-related damage to health and property and its cost is substantial. The costs of pollution abatement are also substantial, but in general are small percentages of the total expenditures of industry, government, and the general public. They do not appear to impose a significant burden on the general economic welfare or on indiviual firms or sectors of the economy. Job losses appear to be minimal and offset by job creation. Competition does not appear to be unduly affected, probably as a result of a trend throughout industrialized countries to imposition of pollution control requirements of similar magnitude. The inflationary effects are present but appear to be minimal. The pollution abatement measures do appear to contribute slightly to inflation if the costs are measured, but not the benefits. (From the viewpoint of the consumer to whom the cost of a product or service has risen without a corresponding increase in the value of the good or service, pollution control may be considered inflationary. From the perspective of society as a whole, however, the benefits to those harmed by pollution and the deterrent effects of a pollution abatement requirement may be a value that, if taken into account, would prove pollution abatement programs not to be inflationary or even counter-inflationary.)[50]

On the other hand, some plant closures and job losses have occurred,[51] and the distribution of costs may be regressive in some cases. On the whole, available evidence indicates that, while costs of abatement are substantial, benefits are also great

and may exceed costs. How these impacts may correlate with the impacts of increased compensation liability is discussed below.

Specific Economic Welfare

The effects of pollution abatement costs on individual firms and on specific sectors of the public and of business and industry is more difficult to estimate. It is probably impossible to generalize because costs vary substantially. The economic impact would depend upon factors such as: one, the extent to which the firm can spread the cost among consumers, shareholders, insurers, taxpayers, and others; two, the extent to which pollution abatement measures also result in increased productivity and marketable and usable by-products; three, the firm's liquidity; four, the firm's competitive position vis-à-vis the other companies in the same market nationally and internationally; and, five, price and demand elasticity.

In general, however, as mentioned above, evidence of microeconomic impacts of pollution control costs is meagre.

There are significant differences between the impact of compensation and other pollution abatement costs. Some of these differences may tend to make compensation liability less expensive than other forms of pollution control while certain differences may make compensation liability more costly. Compensation payments do not directly stimulate the economy through investment in pollution control technology, nor does the money spent provide any benefit to the firm similar to the increased productivity, recovery of energy or marketable by-products, or cost savings that frequently accompany capital expenditures on pollution abatement or changes in production methods. On the other hand, the true costs of compensation liability may be the cost of insurance premiums and deductibles in many cases, as standard third party insurance policies cover substantial sums payable as a result of sudden and accidental release of contaminants. Special environmental impairment liability insurance to cover routine emissions is available, although it is restricted and deductibles and premiums are high.

The economic impact of compensation liability will depend largely on the availability of adequate insurance coverage. This will be a function both of the types of risk covered and whether upper limits on coverage available at an affordable premium are sufficient to cover losses likely to result from contamination.

There is evidence that the insurance industry is willing to provide some coverage of risks now excluded at premiums affordable by most operators under certain conditions. Insurance experts who testified before a committee of the Ontario Legislature in 1979 indicated that they believed insurance companies would provide coverage for compensation liability for spills, not all of which would be sudden and accidental, under amendments to the province's *Environmental Protection Act*.[52] Spills would include leaks and any discharge abnormal at the time and place it occurred, whether they were sudden and accidental or gradual and deliberate. The proposed amendments contemplated imposing joint and several absolute liability on all owners and handlers of the pollutant at the time of the spill. The witnesses gave estimates of premiums for this coverage that were not substantially higher than premiums for existing coverage of third party liability.[53] Insurers also indicated to a task force studying "perpetual care" of waste management facilities that if operators were required by statute to obtain insurance coverage for compensation liability following site closure, the companies would write the required policy provided a reasonable number of policies were to be written.[54] The information received by the task force indicated that one group of insurers would be willing to issue policies providing direct protection to third parties covering losses occurring up to five years after the last premium was paid and covering a number of different interests in an operation, such as the site operator, the site owner, and the municipality using the site for disposal of its waste. In addition, the policy could be made transferable to a new operator or owner.

Nevertheless, availability of insurance can only be determined on a case-by-case basis. Insurers will generally retain the right to refuse to issue policies in individual cases, to assess premiums on an individual basis, to withdraw coverage, and to refuse to renew policies or to continue coverage which results with high loss experience.

The dollar value of insurance available will also be a constraining factor. High deductibles and premiums may discourage small operators from engaging in certain high-risk activities. Many large corporations are self-insurers for the first several million dollars of third party liability as a result of prohibitively high premiums to cover the most likely levels of losses.[55] This strategy is not available to small operations.

In assessing the probable economic impact of liability for compensation on firms, it may be useful to distinguish between the probable average loss experience and the worst possible case. The evidence indicates that most spills are within a relatively narrow range of costs that are within insurable limits.[56] Compensation liability should not therefore

impose an onerous financial burden most of the time. However, in exceptional circumstances, loss can greatly exceed insurable limits and corporate assets.[57] Most spills occur at a location where they do little harm to human health or property. However, the same spill which causes little damage in one location can be extremely costly if it occurs in another location. For example, the train that derailed in Mississauga in November 1979, causing the evacuation of 240,000 people, would have been in the centre of Toronto, which has a population of over one million people, if it had derailed fifteen minutes later and fifteen miles further east.

The uninsurability of worst possible cases is illustrated by the risk associated with nuclear power plants. Neither U.S. nor Canadian insurance companies were willing to insure the full liability imposed upon the nuclear industry by legislation passed in each country.[58] As a result, in both countries the government became a co-insurer and placed limits on liability, so that there is no insurance coverage available for a large portion of the potential risk. In estimating the impact of compensation systems, governments often emphasize this average loss experience to indicate that legislation would not impose unrealistic burdens on industry, while industry spokesmen stress the impact that worst possible cases would have on individual firms, particularly small- and medium-sized concerns. Both must be taken into account.

In designing a compensation system, therefore, it will be necessary to create a capacity to alleviate undue economic hardship to individual operators and potential adverse effects on the general economic welfare. For this to be done at least expense to the primary goals of full, timely compensation and deterrence, the system should contain mechanisms for identifying adverse effects and mitigating them, rather than compromising the system from the outset by assuming adverse effects that may not occur. For example, as mentioned above, it would be preferable to provide for a procedure to limit liability or provide government subsidization on a case-by-case basis on a showing that a firm is incapable of assuming full financial responsibility for a particular pollution incident rather than exempt or limit the liability of all firms in a class on the basis of undocumented concern about their ability to pay.

Procedural Fairness and "Civil Liberties"

As mentioned above, for a compensation system to provide deterrence, liability for payment should be connected to a person's causation of the pollution incident, his control over the toxic substance, and his fault or his ability to have prevented the loss. To make him pay without regard to such considerations serves the assistance goals but provides no deterrence. A workable compensation system that allocates responsibility for payment to individual pollution sources must attempt to balance the need for expeditious, simplified, inexpensive procedures available to the claimant against a requirement of procedural fairness to protect the interests of the person alleged responsible for payment. It would be unfair to impose harsh economic consequences on a person whose activities have little or no nexus to the loss; but establishing such a nexus raises difficult legal problems and is costly. A scheme that retains a degree of deterrence may require removing some of the defences available to polluters and some of the evidentiary and procedural barriers to proving liability, while still retaining procedural safeguards to protect the rights of the person alleged responsible. While the economist's view of efficient resource allocation may require a person who manufactures toxic substances to bear the cost of pollution regardless of direct responsibility for the harm they caused, considerations of fairness may dictate that society should pay unless a strong cause-and-effect nexus can be established between the activity and the harm and perhaps some degree of culpability.

As one procedural reform that has been suggested by some commentators,[59] shifting the burden of proof that a substance is safe to the person who stands to profit from it provides an example of the tension between the goals of protecting public health and safety and of preserving the civil liberties of the defendant or the procedural safeguards available to him.

This shift in onus in a compensation case would mean that, once the plaintiff has shown that a substance has been discharged and that the known effects of this substance are consistent with the harm or loss he has suffered, the onus of proving the substance did not cause the harm would shift to the person who discharged it.

Such reverse onus provisions are common in quasi-criminal statutes dealing with public health and welfare, particularly with regard to elements of an offence peculiarly within the knowledge of the accused.[60] But in quasi-criminal or criminal legislation, they erode the principle that a defendant is innocent until proven guilty and, if reverse onus provisions are incorporated into schemes modifying civil liability, it is equally certain that many will feel they offend the principle that the burden of proof is on the person alleging a wrong. Wherever they have been used, they have led to arguments that they offend civil rights and diminish the rule of law.[61] As a

result of such concerns, therefore, the two primary goals of the compensation system will be tempered by the need for procedural safeguards wherever loss compensation responsibility is allocated to individual sources.

The Effect of Power Relationships

Experience indicates that the success of compensation systems will depend upon their acceptability to industry. Their adverse economic impact may also be a function of the extent to which powerful companies and sectors that could more readily afford compensation are able to shift their liability to smaller concerns with less wealth and less power.

With regard to the latter problem, designing an equitable system may mean some legislative interference with freedom of contract, for example, by restricting the right of persons who profit from contaminants to "contract out" of their compensation liability.

During hearings on Ontario's *Environmental Protection Amendment Act* in 1979, a number of representatives of farmers, truckers, and other small businesses expressed concern that owners of pollutants would not do business with them unless they were to sign contracts agreeing to assume all liability imposed under the Act.[62] As the Bill proposed to make all owners and persons in control of contaminants jointly and severally liable, it was suggested that this might cause manufacturers to sell only on condition that carriers or recipients contract or assume ownership at the factory gates.

Events in Florida following the passage in 1970 of the *Oil Spill Prevention and Pollution Control Act*[63] illustrate the impact that lack of acceptance of legislation by powerful interests can have on its effectiveness. Difficulties in implementation of this statute stemmed both from real economic factors – shippers were unable to obtain insurance to respond to the liability imposed by the Act – and from the raw exercise of power by large corporations. Which factor was more responsible for the inability for the state government to implement its law is problematical.

The Oil Spill Act made anyone who caused a spill absolutely liable for all costs of cleanup and damages, with no limitation on liability. Owners of all terminal facilities and vessels were required to establish and maintain evidence of ability to meet this financial responsibility as a condition of obtaining a licence to operate. The state government could claim directly against the insurer or bonding surety to recover all cleanup costs and damages.

Because shippers were unable to obtain insurance, they were forced to comply with the provision requiring them to establish and maintain evidence of financial responsibility by becoming self-insurers for at least part of the liability and by pledging all their firm's assets. As a result, shippers refused Florida business or required people in Florida with whom they had contracts to provide oil to hold them harmless for any spills occurring in Florida waters. They also challenged the validity of the legislation in the courts, doubled the price of oil, and exacerbated an energy shortage by withholding oil supplies.[64]

One petroleum company providing a utility company with fuel for generation of electricity threatened to exercise its options to terminate the contract unless the utility posted evidence of financial responsibility for the petroleum company; agreed to indemnify and hold the petroleum company harmless for all liabilities imposed by the statute and not covered by the petroleum company's liability insurance; and agreed to provide the same guarantees for any firms with which the petroleum company might need to make similar arrangements in the course of carrying out its contract.[65]

There are other examples of the effectiveness of industry in blocking proposals for reform in this field. The "Superfund" legislation described in Chapter 5 of this study was introduced in the U.S. Congress in June of 1979. To ensure its passage, the Bill's supporters had to allow deletion of the provisions for compensation of pollution victims, which are described in this study.

The proposed legislation was to create a fund, financed by manufacturers of toxic chemicals, which would help pay for cleanup of abandoned hazardous waste disposal sites and spills of toxic substances, as well as providing third party compensation. To safeguard the passage of the cleanup provisions, which were more acceptable to industry, the U.S. Congress abandoned the compensation aspects of the Bill. According to the Wall Street Journal,[66] the Bill had been considered "all but dead" until the Senate passed a version devoid of provisions imposing liability for loss of income and damage to property. The *Journal* described the amended bill as "watered-down" and "a last-ditch compromise." As of December 1980, one and a half year after it had been introduced, the "watered-down" version had passed both Houses of the U.S. Congress and was awaiting presidential approval.

As a result of industry lobbying, Part VIII-A of Ontario's *Environmental Protection Act*, which is also described below, was similarly subject to lengthy delays and dramatic weakening of its compensation

provisions. The Bill was introduced in December 1978, but was not passed until a year later.

Although the Bill imposed a liability on industry to clean up spills of pollutants, mitigate damage, and restore the environment, industry opposition focused on its third party compensation provisions. When introduced for first reading, the Bill provided for compensation liability without proof of fault or negligence, and provided for the traditional six-year limitation period. Environmentalists pointed out that it was unclear what liability did depend on, and lobbied for absolute liability.

On second reading, in June of 1979, the Bill was amended to provide that liability would be absolute, but the limitation period was reduced to two years. Both opposition parties supported absolute liability. By November of 1979, however, the Bill had not yet been passed. The author, who was very active in lobbying on behalf of environmental groups, began to believe that the Bill was in danger of dying on the order paper, as a result of industry lobbying against absolute liability for compensation.

When the Mississauga train derailment occurred, the Canadian Environmental Law Association used that accident to publicize the need for passage of this Bill and pointed out the danger that the Bill might die as a result of industry's opposition. Following the derailment, the industry lobby intensified, spearheaded by the Canadian Manufacturer's Association, which hired a prominent Toronto lawyer with good political connections to represent them. As a result, the Minister of the Environment lost the support of both his own caucus and that of the Liberal Party. The Minister introduced an amendment replacing absolute liability with a "due diligence" or "reasonable care" test. If an owner of a pollutant or a person in control of it can prove that he exercised reasonable care to prevent a spill, he is not liable for compensation.

Some of the possible consequences of this amendment are discussed below. They may be summarized by saying that the industry lobby may have succeeded in creating a liability that is no more onerous than the previous common law liability and may even be less stringent.

4 Towards an Improved Compensation System

The preceding section described the primary goals of a compensation system and other social goals that must be taken into account in designing a compensation scheme. This section describes the traditional method of obtaining compensation, the common law tort system, and analyses its advantages and disadvantages.

As the strengths and weaknesses of the tort system are well documented, this study will not attempt an exhaustive survey of the law. Instead, the major torts will be described briefly as they apply to compensation for pollution injuries. Issues that act as a barrier to efficient recovery of compensation by plaintiffs will be identified as matters that should be addressed in any attempt to design a compensation system which meets the goals set out above.

Following discussion of the tort system, the role of insurance in providing monetary relief from pollution-related injuries will be addressed. We will discuss the role that first party insurance now plays in providing relief and the present role of third party liability insurance in support of the tort system. The potential for expanding the use of insurance as a method of providing relief from pollution-related injuries will be considered.

The Common Law Tort System

With a few exceptions, the injured person obtains compensation for pollution damage in Canada by launching a civil action against the party alleged to be responsible for the injury on the basis of one or more of six common law torts: nuisance, riparian rights, negligence, the doctrine in *Tylands v. Fletcher* (strict liability), and civil liability for breach of statute.

This uncodified collection of principles and precedents has evolved through decisions made by judges over centuries. It still frequently reflects the attempts of the courts in Canada, Britain, and other Commonwealth countries in the eighteenth and nineteenth centuries to balance the needs of individuals for redress for wrongs done to their person or property against the social welfare perceived to result from encouraging the development of industry and the growth of urban centres necessary to provide a concentrated, accessible labour force for industry and commerce.

The present tort system consists of a number of overlapping and varying "causes of action," each with its own criteria for eligibility for compensation and its own defences. To obtain compensation, it is necessary for the injured person to fit his case into one of these six "boxes," in which liability is based upon different criteria in different circumstances, sometimes upon the injuring person's fault or negligence, sometimes on the reasonableness of the activity causing the injury while in some circumstances the defendant is subject to liability even if he acted reasonably and without fault.

In any particular case, it is so difficult to determine which is the appropriate "box" that lawyers usually plead most or all of the causes of action. In any situation, there will probably be conflicting precedents and principles that make it difficult to predict success. Even within the individual causes of action, there are conflicting theories of liability and different criteria for recovery, depending on the nature of the harm incurred and the relationship of the injured person to the source of his injury. For example, in an action based on nuisance, the courts apply different standards to different types of injury. Private nuisance is an interference with an owner or occupier's use and enjoyment of his land. It applies to a wide variety of situations including annoyance by noxious fumes,[1] particulate matter,[2] pesticides,[3] and noise.[4] If a plaintiff can show actual damage to property or health, he is entitled to recover damages even if the defendant's activities were reasonable and necessary in the circumstances. But if the same activity causes only personal inconvenience and annoyance – for example, factory owners that deprive neighbours of the use of their yards and force them to keep their windows closed during hot weather and to purchase air conditioners in lieu of opening doors and windows – the plaintiff must prove that the defendant's use of his land was unnatural and unreasonable in the

circumstances. Similarly, if the plaintiff's activity is one that is not unusual, he may be compensated for interference with it, whereas if he engaged in an "abnormal" activity, for example growing rare orchids in his home, the same polluting activity would result in no requirement that the polluter compensate him.

The following is a brief description of the major causes of action. This discussion will not consider the other major remedy available in a tort action, the injunction. Nor will it discuss public nuisance, that is, harm to public property or disturbance to members of the public (apart from health damage) that is not based on a property interest. This action poses special problems of standing and special difficulties in evaluating the injury and establishing a basis for compensation. The problem of obtaining compensation for harm to public lands and natural resources causing widespread damage, but no special harm to any single person or group of people, is a very important issue. It has yet to be adequately addressed by the current legal regime, but is beyond the scope of this study.

Private Nuisance — As mentioned, private nuisance is unreasonable and unnecessary interference with the use and enjoyment of land by its owner or sometimes by its occupier, such as a tenant. Early and persistent ringing of church bells[5], hammering and beating of trays against a common wall to interrupt a neighbour's occupation of teaching music,[6] and spiteful firing of guns near a neighbour's breeding pens to cause his silver foxes to miscarry[7] have been considered nuisances by the courts. So have smoke and fumes from a tobacco factory which saturated neighbours' clothing and furniture and made them ill,[8] odours from a pulp and paper mill that interfered with a resident's comfort and enjoyment of his home,[9] vibrations from engines which damaged a house,[10] noise and dust from demolition[11] and construction of buildings,[12] and junkyard noise.[13] The person sued for creating a nuisance need not necessarily be an owner or occupier of adjoining or nearby land. He could be a user of nearby public land,[14] for example, a construction contractor paving the road or a telephone or hydro repairman working on a line.

A private nuisance may cause two different types of injury to an individual's rights. In the first category is actual damage – to health or to property (or the consequent economic loss). For example, an Ontario foundry was ordered by the courts to cease polluting the air with fumes because these fumes rendered the flowers inside the greenhouse of a neighbouring florist dirty and "unwholesome."[15]

The second type of injury for which nuisance provides a remedy is that which causes personal inconvenience and annoyance. For example, an oil refinery was ordered to stop creating offensive odours that had forced neighbours in the area to close their windows at night in hot weather.[16] The court also awarded damages for inconvenience and depreciation of the value of the property of the complaining neighbour. However, if a nuisance results only in personal inconvenience and annoyance, the interference must cause recurring or continuous inconvenience to a person of "ordinary" sensitivity. Furthermore, the plaintiff must prove that the defendant's use of his land was unnatural and unreasonable in the circumstances. This requires the court to consider factors like the neighbourhood and the degree and duration of the annoyance. What would be a nuisance in a quiet residential neighbourhood might not be in a factory district, so that the poor, who are more likely to live in a situation conducive to industrial nuisances than the rich, are less likely to be able to use the doctrine of nuisance to recover compensation.

Whether the nuisance causes actual damage or merely loss of enjoyment of property, the complainant must show that the person causing the nuisance knew or ought to have known about the offensive effluent or discharge causing, for example, the air or water pollution, and did not act upon such knowledge to prevent the injury. Because nuisance requires the court to balance the harm to the victim of pollution against the economic welfare resulting from pollution activities, judges have frequently refused to award damages except in the most serious incidents.[17]

A number of defences are available. The defendant will sometimes succeed if he can show that the plaintiff is abnormally sensitive or is making some unusual use of his property, which makes the property particularly susceptible to the effects of the defendant's activities, or that he has legislative authority to carry on his activity or has been committing the nuisance continuously for 20 years.

Riparian Rights — Rights to the use of water in a stream, river or lake stem from a person's property interest in, or possession of, the land bordering on the water. An interest in the land gives him or her, according to this traditional English doctrine a right to continued flow of the water in its natural quantity and quality – undiminished and unpolluted. A person with these rights is called a "riparian owner" and the rights are called "riparian rights."

There are certain exceptions. Diverting water for household purposes is a reasonable use that can be made without fear of liability. But if a person upstream changes the quality or level of the water

flowing past his land to the detriment of people downstream, he may be liable to a suit in civil court. This cause of action is one of the most effective in providing compensation, but its dependance on some property interest for standing excludes its use by, for example, fishermen who do not own or occupy any land bordering on the fishery.[18]

Trespass — The common law of trespass refers to wrongful physical acts done intentionally and directly on a person's lands. This makes its application narrow. It is not clear, for example, whether the pilot or owner of an aircraft that disturbs a person by flying over his land can be successfully sued in trespass nor whether a landowner can sue for trespass beneath the surface of his land below the level at which he can use it himself. Water pollution that despoils a landowner's beaches or water banks, however, or anything that is washed up, propelled, dropped, or otherwise placed on his land, for example, air pollutants landing on one's property, which are emitted from an identifiable source, would probably give rise to an action in trespass. One advantage is that the intentional trespasser is liable for any damage done while on the land even if his or her motives were good. In theory, this might make trespass available as a basis for compensation in cases of inconvenience or loss of use and enjoyment of property in which nuisance would not apply because the acts of the defendant are considered reasonable. In practice, however, the courts have been reluctant to apply trespass when nuisance is available and have been reluctant to extend the doctrine of trespass beyond the scope of nuisance.

Negligence — Negligence is conduct that falls below the standard regarded as normal or "reasonable" in a given community. If conduct falls below that standard, the person responsible for the conduct may be liable for any damage caused.

Although pollution sometimes results from activities carried on in a negligent manner, more often pollution damage results from activities regarded as normal and reasonable in the community. To succeed in negligence the plaintiff must not only prove that the conduct under attack was below the standard of reasonable care in the community but also that the defendant should have foreseen the damage that resulted. As a result, negligence has seldom been used successfully as a basis for suits for compensation for pollution damage, as it is much easier to prove that any activity which may have been negligent constituted a nuisance or a breach of riparian rights.

Rylands v. Fletcher — The notion of strict liability for harm caused by the escape of dangerous substances arises from an old English decision of the nineteenth century, *Rylands v. Fletcher*[19]. This case established the principle that a person who brings onto his land for his own use anything likely to do harm if it escapes does so at his peril. He may be held fully accountable for all damages resulting from its escape even if he has taken the utmost care to prevent it from escaping. Unlike negligence or nuisance, it is not necessary to prove any carelessness or unreasonableness.

Strict liability however, does not mean absolute liability. A number of defences are available to the defendant. The defences include: the causation of the event by an act of God; an intervening cause, for example, the actions of a stranger; the naturalness or reasonableness of the use of the property; the plaintiff's consent; and statutory authority.

Civil Liability for Breach of Statutes — An action will lie where a statute provides for performance of a certain duty by certain persons and some person for whose benefit the statute was passed is injured by failure to perform this duty. To succeed, the plaintiff must establish that the action constituting the breach of statute caused the injury complained of; that he is within the class of individuals the statute was designed to protect; and that his injury was within the range of injuries the statute intended to prevent. The ability of the plaintiff to rely on a breach of statute alone as a basis for action is tenuous. It is unclear whether breach of a statute is a basis for creation of new tort duties in the absence of negligence, nuisance, or some other breach of common law, or whether it is merely evidence of negligence.[20] The most common approach of the Canadian courts, based on a 1964 decision of the Supreme Court of Canada,[21] is to treat breach of a statutory provision as prima facie evidence of negligence rather than as a separate tort.

Because of the difficulty of showing that one's injury was caused solely by the breach of a statutory provision intended to prevent that specific injury to that particular person, breach of statutory liability has been of limited utility to persons suffering pollution-related injury. Nevertheless, members of a family suffering carbon monoxide poisoning as a result of a contractor's installing a gas heater and furnace burner without inspecting the chimney for soot, in contravention of the *Alberta Gas Protection Act*,[22] and fishermen whose nets were fouled by a ship discharging oil into the Fraser River contrary to the *Fisheries Act*[23] have recovered damages, and there appears to be a trend developing towards finding liability when statutes have been breached.

Advantages of the Tort System

In theory, the tort system has a number of advantages over other methods of compensation. The injured person can initiate action on his own, without the need to rely on any government agency to protect his interests. He controls the choice of lawyers, medical and other scientific experts to assist him. The parties themselves or their legal advisors maintain control over the timing and choice of strategies and positions through every stage of the negotiations, subject to consideration such as legal and scientific ethics, rules and civil procedure, and rules of evidence. (This can be an important factor. Victims of pollution who have relinquished control over legal proceedings for compensation to government agencies have expressed dissatisfaction with the results.) Except in the case of infants and certain persons deemed by law to be incapable of making informed judgments without assistance, the decision of the plaintiff whether to accept a settlement offer need not be approved by any bureaucracy. Moreover, if the matter goes to trial, it is decided by an independent judiciary designed, at least in theory, to be above political or partisan pressures, and whose decisions are subject to appeal to higher courts.

The common law is capable of adapting to take into account changing social conditions and rising expectations. The existing causes of action can be extended to recognize new interests, relationships, and claims as bases for legal liability.[24] Where loss of amenities is considered compensable, for example, the court can recognize a plaintiff's reasonable expectation of a higher standard of comfort in a time of affluence than might have been recognized in the past. The court can also raise standards by taking into account the development of technology that becomes available to achieve a higher quality of life, to prevent injury, or to use in establishing a causal connection between an event and an injury.

Other advantages of the tort system include the relatively broad scope of the kinds of injuries considered compensable; the lack of any ceiling on damages that are recoverable; the availability of information through the discovery process; the rigorous nature of the analysis of issues through adversarial procedures; the public nature of the litigation process; and the likelihood of recovery of party and party costs by the injured person from the defendant as part of a settlement or in the event of success in court.

Disadvantages of the Tort System

In practice, these advantages are largely illusory. As a result of the cumbersome, time consuming, and expensive adversarial process, most commentators feel that the disadvantages of the tort system far outweigh its advantages.[25] Atiyah[26] has suggested that the tort system is "staggeringly expensive" and that the cost of operating no other compensation system approaches that of the tort system. Atiyah estimates the total cost of the tort system at nearly double the amounts paid out in compensation. This results from the cost of operating the third party liability insurance system, which provides most of the funds paid out by defendants to plaintiffs,[27] and the costs of the settlement process, which must be duplicated because both parties undertake the same inquiries. He attributes the cost of the insurance system to high commission brokerage and advertising costs of insurance companies, which raise the cost of premiums. He attributes the high cost of the settlement process to the detailed examination required to determine the causes of every accident that gives rise to a claim; the expertise needed to ascertain cause and fault; the expense of interviewing witnesses and collecting evidence; and the difficulties involved in assessing the amount of compensation.

The cost and delay involved in the settlement, negotiation, and litigation process together with the uncertainty as to the outcome and the eventual cost make it unlikely that the plaintiff will take advantage of the theoretical strengths of the system. Although no figures are available for pollution cases, statistics show that plaintiff success in other personal injury tort actions is low.[28] Although it is possible that this low success rate is attributable to a large percentage of claims having little merit, it is much more likely that it results from an imbalance in the tort system. The psychic and financial costs of litigation undoubtedly deter the vast majority of frivolous claims, as well as many meritorious ones.

Although common law theoretically can adapt to current conditions, its potential for development is of little comfort in any individual case involving an innovative claim. The *Donahue*[29] and *Pugliese*[30]-type cases, in which the courts have made a great leap forward, are by far outnumbered by cases in which the courts have refused to extend the common law to new injuries or interests. In fields such as occupational health and safety, labour relations, and environmental amenities, the common law courts have often proved capable of greater momentum in restricting individual rights to facilitate industrialization than in removing barriers to recovery. Negligence, for example, which has developed dramatically to expand occupiers' liability, manufacturers' liability to consumers of products, and the liability of professionals, has failed to respond similarly to pollution cases. Similarly, the doctrine in *Rylands v. Fletcher*, which seems

tailor-made for pollution cases, has generally been restricted by the courts to very narrow circumstances involving substances known by the user to be especially hazardous and to "unnatural" uses of land. In addition to judicial conservatism, concerted action by industry has acted as a brake on development of new law. Insurance companies and trade associations, which have a long-term interest in limiting the civil liability of their clients and members, have frequently given financial backing to research and litigation activities in controversial cases.[31] Where this does not result in settlement that avoids a judicial determination which might set a precedent, it results in the defendant carrying appeals to the highest level of court backed by the best expertise available, which the plaintiff can ill afford.

Canadian governments have also intervened to immunize industry from the consequences of successful litigation by passing new legislation or by amending existing legislation to provide statutory authority to pollute or to restrict the right to compensation or to an injunction.[32] On at least one occasion, a provincial government attempted to overrule retroactively a court decision in favour of a plaintiff against a polluting company.[33]

Even the lack of any ceiling on the amount of compensation recoverable, which is an advantage over many social assistance schemes and legislated compensation schemes, is helpful only if funds are available. The tort system has no mechanism to require potential tortfeasors to maintain any funds available for compensation of potential victims. Instead, the courts have indirectly placed a ceiling on recovery by limiting the scope of interests considered compensable. Otherwise, the plaintiff takes the defendant as he finds him. If the defendant is impecunious, or carries insufficient insurance to cover the full amount of damages awarded by a court, no alternative source of funding is available.

Any attempt to supplement or replace the tort system with a new compensation system must deal with the disadvantages that result from an expensive, time-consuming struggle between unevenly matched opponents. These disadvantages include the need to prove causation, cost, delay, difficulties in establishing the appropriate cause of action and basis of liability, restrictions on the scope of damages, difficulties in measuring damages, the lack of availability of class actions, and inadequate limitation periods.

Causation, Remoteness, and Foreseeability — The problem of proving that a particular action caused the specific injury the plaintiff complains of is widely acknowledged to be the paramount barrier to establishing liability for environmental damage.[34] So little is known about the toxicity of many chemicals in common use, their dispersion through air and water, their persistence or stability, their affinity for living organisms, their synergesis, the movement of air and water currents and underground water, and the etiology of diseases that it can be almost impossible to prove that any particular action precipitated the injury. There are usually numerous other available explanations. In areas of widespread pollution there may be many potential sources of a single pollutant, other pollutants that cause the same disease, and possibly a variety of natural causes for the same disease or injury. Moreover, establishing causation in such circumstances will usually depend upon costly scientific studies and expert evidence, often by a combination of practitioners of a number of separate scientific and technical disciplines. The methodology and measuring devices available to undertake such studies are often new, experimental, and crude. Often they can do no more than establish a range of probabilities.

For the plaintiff to recover compensation, he must prove that some act or omission by the defendant was the direct and proximate (that is, immediate) cause of his injury, relying on information which is frequently available only to the defendant, and sometimes to neither the plaintiff nor the defendant. If a series of events or actions contributes to a situation that results in pollution damage, only the immediate cause will result in liability. Any intervening causes may render the initial activity free from liability. When the court has a number of possible causes to choose from and cannot be certain which of the causes contributed to the injury and which did not, it may find that the defendant has not proven causation, or it may hold that the injuries were "too remote" in time and space from the defendant's conduct to be attributed to it. Similarly, if it is clear that the defendant's conduct was a cause of the plaintiff's damage, but that a number of other intervening factors aggravated the damage or caused it to occur in an unexpected or unusual way, the court, instead of using the language of causation, may rule that the damage was unforeseeable. In a case where problems of causation are difficult, the court may express its reasons for denying liability in terms of "causation," "remoteness," or "foreseeability." Atiyah has described this process of describing the same phenomenon by three different names as a "morass."[35]

Because causation in pollution cases is so often a matter of speculation about probabilities, the question of who bears the burden of proof and what evidence is required to establish a case is crucial to success. Under existing rules of evidence, the burden

of proving causation is on the plaintiff and statistical or epidemiological evidence of a probable link between exposure to a particular contaminant and a particular illness or environmental change alone is insufficient evidence of causation. It is often impossible to show a cause-and-effect relationship between a specific event and a particular injury. Noise pollution cases are one example of an area in which plaintiffs have had a marked lack of success. While there is evidence that noise causes fatigue and general stress as well as a variety of physical symptoms, these symptoms are almost always associated with a variety of other causes. The courts have been extremely reluctant to attribute mental and emotional disturbance to noise, and have frequently dismissed suits for injunctions or compensation on the grounds that the plaintiff is overly sensitive or lacks credibility.[36]

Cost — The problem of cost is second only to causation in its negative effects on successful common law action. Unlike the United States, where each party is responsible for paying his own expenses, win or lose, in Canada the courts usually award the successful litigant a substantial portion of the cost incurred, to be paid by the unsuccessful litigant.

The plaintiff is initially responsible for paying his lawyer a fee for the services rendered in connection with the litigation. He is also responsible for paying disbursements, which are sums of money actually paid by his lawyer to others, such as payments to the courts to purchase subpoenas, to file documents, to obtain transcripts and copies of documents, and to participate in various stages of the legal process. Initiating legal action will usually involve giving one's lawyer a substantial retainer in advance, although if a plaintiff is impoverished or of modest means and there is a strong likelihood of recovering substantial damages, the lawyer might waive this requirement.

It is difficult to predict the fees and disbursements that complex litigation such as environmental damage suits might entail because of the many variables involved. As a result of this uncertainty, compounded by the rule in most provinces that a lawyer may not advertise a set fee for his services, neither the lawyer nor his client knows, in the absence of an express agreement between them, what the lawyer's fees and disbursements will be.

These difficulties lead to mutual dissatisfaction. Clients feel they have been overcharged, while their lawyers feel equally put out because they have not been able to charge a fee commensurate with the effort and time involved. The plaintiff may avoid this uncertainty by conducting his own litigation without the assistance of a lawyer, but this will be inadvisable in almost all cases where substantial damages are involved. It will also result in the plaintiff's being denied the right to recover costs against the defendant if he is successful.[37]

If the plaintiff wins, he will likely recover a portion of his legal fees and disbursements from the defendant in addition to the compensation awarded. But these "party and party" costs are unlikely to cover the plaintiff's full legal costs. He will probably recover only one-half to two-thirds of what he has paid out.[38]

This costs system favours the large corporate or government polluter over the individual victim of pollution. If the plaintiff loses, he will usually be responsible for indemnifying the defendant for a similar portion of his legal costs, which, in the case of a powerful corporation that can afford to pay much more for preparation and presentation of a case than the victim of pollution, is likely to be a much higher sum that his own lawyer's account. Moreover, the defendant will frequently be a government agency, which has available to it tax revenue to cover its legal costs and may itself pay no taxes, or a business, to whom all legal fees, disbursements, party and party costs, and damages will be tax deductible if incurred as a cost of carrying on business.[39]

The plaintiff's legal fees and disbursements and party costs awarded against him will be tax deductible only if the harm alleged is to his business interests. As will be discussed below, the legal fees and disbursements of the defendant and awards and settlements will frequently be covered by his insurer, while adequate insurance is less likely to be available to the plaintiff.

If the plaintiff disputes either his own lawyer's fees and disbursements or the party and party costs claimed by the defendant, he may challenge them; however, the "taxation" process in which the lawyer's account is reviewed by a court official to determine whether under all the circumstances the charges made are reasonable adds an additional level of expense to the litigation process.

In the author's experience, the cost of litigation is a substantial deterrent to litigation to obtain compensation for damage caused by pollution. Unless the damages recovered are very substantial, the plaintiff, even in a successful action, will have to pay his lawyer out of his damages award the difference between his lawyer's fees and disbursements and the portion of them recovered as party and party costs. This difference may be substantial and may "eat up" most of his damages. Moreover, if the lawyer has overestimated the sum likely to be recovered and sued in a court with a higher monetary jurisdiction (an error of judgment not difficult to make in the uncertainties of this kind of litigation), the court may award

the successful plaintiff costs on a lower scale, so that the difference between his lawyer's account and costs for which he is indemnified by the defendant may be even more substantial.

In some jurisdictions, the cost of legal fees is less of a disadvantage to plaintiffs using the tort system because lawyers may charge a fee that is contingent on their winning the case. Thus if the plaintiff loses the case, he pays no legal fees but if he wins the lawyer takes a previously agreed upon percentage of the damages. This fee would represent a much higher percentage of the damages award than would a fee not based on such a contingency.

In many Canadian provinces, such a "contingency fee" is illegal and unethical. Although the author is one of those who believes this particular cure may be worse than the disease, there is no doubt that the abolition of the rules against contingency fees could assist impoverished and even middle-class plaintiffs who have strong cases they could not otherwise afford to pursue.

Even more of a deterrent to meritorious litigation than his own lawyer's fees and disbursements is the matter of party and party costs. The plaintiff who is prepared to pay his own lawyer will frequently decide against pursuing his remedies as a result of the additional degree of uncertainty posed by the possibility of paying party and party costs to the defendant if he is unsuccessful.

To the author's knowledge, there are no studies indicating the extent to which the costs of litigating deter plaintiffs from initiating common law suits for compensation of pollution damage. Nor are there any studies of the actual cost to parties who have litigated such claims. These are normally private matters between a solicitor and his client. Fees paid by clients to solicitors and consultants are not in the public realm, except where costs have been taxed. Evidence that the cost of litigating such claims is so high as to deter many meritorious claims is therefore impressionistic. Nevertheless, what evidence is available would tend to support this belief and to indicate that in many cases the cost of litigating may approximate or even exceed the damages recovered.[40]

Basis of Liability — The very basis for liability in the tort system is shifting sand – a constant source of uncertainty and unpredictability. The bases for liability range from the intent of an act, through foresight, reasonableness and duty of care, to the mere infliction of harm. There is no single, clear criterion for recovery. Although the vast majority of the cases fall into the middle ground, where the "cause of action" is either nuisance or negligence, even here, the border between reasonableness and carefulness is shrouded in fog. In the mind of one judge, reasonableness may mean strict liability, while another may equate it to lack of negligence.

The fuzzy and multiple bases for liability entail a number of substantive and procedural barriers to common law action. These barriers include the need to bring one's claim within one or more specific "causes of action" based on a variety of differing rights, interests, and duties; evidentiary rules that favour the defendant in complex environmental cases; the variety of defences available to the defendant; and, in cases on the borderline between public nuisance and private nuisance, the potential problem of the plaintiff's standing to sue.

Showing the requisite property or personal interest to bring a case within one of the established causes of action can be difficult. A detailed discussion of the intricacies of the various causes of action is beyond the scope of this study. However, one example may illustrate the difficulties. A person in possession of land bordering on water under the riparian rights doctrine is entitled to the continued flow of the water undiminished in quantity or quality. If he is deprived of water, he may sue for damages. However, the law provides for no protection of access of any non-riparian owner. Thus, a non-riparian owner of a parcel of land several thousand acres in area whose access to a water course is blocked by a small holding and whose use of his property may depend upon an ensured supply of water would have no redress should his riparian neighbour interfere with his supply of water or should an upstream user interfere with quantity or quality of water.[41] Even though the value of the water may be much greater to the non-riparian owner than to the riparian owner, only the riparian owner would have a right to sue for compensation for pollution of this water supply.

Evidentiary problems are also formidable. As discussed above, proving causation is often difficult or impossible. Even where scientific evidence is available, it is seldom conclusive. Scientists will often disagree on what should be measured, on how it should be measured, and about how accurate the measurements are. Frequently there is not enough information available on which to base a "scientific" conclusion. There is always some doubt. The question is, who should have the benefit of the doubt? The person emitting potentially harmful pollutants, or the person who is suffering harm? Present rules of evidence make it difficult to establish this cause-and-effect chain of events scientifically.

Furthermore, it is difficult under these circumstances to show the requisite intent, unreasonableness, lack of foresight, duty of care, or other bases of

liability, which change from cause of action to cause of action.

Defences available to the defendant also vary depending upon which cause of action is used. Under *Rylands v. Fletcher*, defences are relatively few and narrow, whereas under negligence, defences are very broad. In a private nuisance action, the defendant will sometimes succeed if he can show that the plaintiff is abnormally sensitive or is making some unusual use of his property that makes the property particularly susceptible to the effects of the defendant's activities (an example might be the plaintiff who grows rare orchids in his home as a business).

If a defendant can show that some statute gave him express authority to create the nuisance and that the nuisance was the unavoidable result of an action authorized by statute, he is beyond the reach of a private nuisance action unless the plaintiff can show that he was negligent. In Ontario, for example, statutory authority is given for operations like electricity generating stations and sewage treatment plants.[42] This defence puts many public works outside the scope of common law actions. The defence of "prescription" refers to a right to pollute acquired by a polluter because he has caused a private nuisance to his neighbours continuously for 20 years. In such cases, the plaintiff is deprived of a remedy no matter how serious the harm to his interests.

In cases where something affects many people, the common law may deny any one person the right ("standing") to sue, unless he can show damage to his property, or show that he has suffered damage much different from or greater than his neighbour's. Some nuisances can cause damage that has both public and private aspects. The borderline between public and private nuisance is not always clear. Fishermen, for example, have been denied standing to sue for compensation for loss of fishing income as a result of pollution on the grounds that the fisheries are public property and therefore the pollution was a public nuisance rather than a private one,[43] but have standing if their nets are damaged.[44]

Time — Under the tort system, a temporary injunction can be obtained quickly but no compensation is available to the claimant until a settlement is reached or the courts have made a determination. If appeals are taken, this will result in further delay, as will execution of the court's judgment if the defendant is recalcitrant.

The system provides an opportunity for "motions" that may be time-consuming. In addition to appeals of final determinations, many intermediate steps involve potential appeals. Between each stage of the proceedings are statutory waiting periods to ensure that each party has adequate notice and opportunity for preparation for upcoming motions or proceedings. Negotiations towards settlements usually proceed concurrently with steps in the litigation; however, false hopes of a settlement may lead both parties to delay taking fresh steps towards the eventual trial.

The complexity of the civil procedures involved in preliminary stages of litigation gives a resourceful defendant ample opportunity for delay. Lack of availability of counsel or witnesses, overcrowded court dockets, the need for interpreters, a change of counsel by a party, ordinary human errors, and many other factors may lead to further delays. It is not unusual for a tort case to take two to five years to complete.

Delay may be offset to some extent by the fact that in the event the plaintiff is successful, his award may include interest from the date of his claim in some circumstances. However, the rate of interest available under the rules of court generally is substantially lower than the interest that might be available to the investor in the market, particularly in times of inflation.

Such delays lead the plaintiff to settle for less than the claim may be worth as a result of the discounted value of future revenue.

Scope of Damages — Compared with some modern compensation schemes that restrict the kinds of interests protected and the kinds of injuries or losses for which compensation is recoverable, torts provide relatively broad damages. Legislation providing compensation to injured workmen and victims of violent crimes, for example, tends to limit recovery to compensation for physical injuries and to restrict economic losses to a percentage of lost wages, as a trade-off for certainty and speed of recovery for those losses that are covered.[45] In torts, there is no upper limit on the amount recoverable. Nor is the means of the tortfeasor taken into account in assessing damages. Nevertheless, damages available at common law do not cover the full spectrum of harm suffered as a result of pollution, nor do they provide adequate deterrence against or redress for the most frequent results of pollution: annoyance, inconvenience, and aesthetic deterioration.

Pollution entails a wide variety of injuries, including physical injuries, temporary and chronic illnesses, death, physical pain and suffering, mental anguish, loss of profits and wages, physical damage to real property and chattels, loss of use and enjoyment of property, devaluation of property, discomfort, inconvenience and annoyance, and aesthetic harm.

The courts have had little difficulty in finding liability for physical injuries and harm to physical property arising directly from tortious activities. To a lesser extent, they have also recognized pain and suffering, mental anguish, and economic losses arising directly out of harm to physical health or property.

However, they have been extremely reluctant to recognize "non-material" losses and "pure" economic losses not directly resulting from physical injury or damage to the plaintiff's own property. Pain and suffering, whether physical or mental, is usually compensable only when closely tied to bodily harm.[46] The victim of bodily injury has a claim to damages not only for actual pain suffered in the past and expected in the future, but also for all disagreeable sensations, including distress over a disabling condition. But with a few exceptions, such as nervous shock or grief arising out of bodily injury to a close relative,[47] no damages are recoverable for mental anguish standing on its own. Even in the few instances where such harm is recognized, the courts often insist on the manifestation of measurable or observable physical symptoms as a prerequisite to recovery. Mental suffering that is not "tacked" onto physical injuries is rejected as too easy to fake, too indirect, too trivial, or too onerous an economic burden to impose on the defendant.[48]

It is unclear whether compensation is available for mental distress arising from destruction of one's property. In the environmental context, this can be a significant kind of injury. Nature evokes strong emotions in many people who may become very attached to a particularly majestic tree or scenic vista, just as some people attach strong feelings to a pet. This may be particularly true of city people who purchase rural or wilderness property as a retreat, in whose case the value of the property consists of its natural state. Although there may be no legal obstacles to awards for mental anguish resulting from harm to the natural environment on one's property, there is no certainty that the courts would look favourably on such claims. If a municipality were, for example, illegally to cut down a mature tree on private property, the measure of damages would usually be the replacement value or the amount by which the sale value of the property is diminished. No allowance is generally made for the sentimental value of the tree to its owner.[49]

Similarly, the courts have been reluctant to consider pure aesthetic values harmed by pollution and other forms of environmental degradation. For example, the courts have been unwaivering in rejecting any claim to a right to a pleasant view, even though "visual pollution" or the destruction of a view can interfere with an individual's use and enjoyment of his property in a similar manner to noise, vibration, polluted air, and bad odours, all of which are actionable in nuisance.[50] It was established at the turn of the century that unsightliness of neighbouring lands is not actionable,[51] and, despite changing social conditions and societal values, recent cases have reaffirmed that such aesthetic interests are not protected.[52] Similarly, the Canadian courts were hostile to claims for damages arising out of obstruction of the light entering windows and circulation of air through windows and doors.[53] Following judicial disapproval of the doctrine of "ancient lights," most Canadian provincial legislatures abolished the prescriptive rights to light and air early in the twentieth century.[54]

The courts have also severely restricted the recognition of inconvenience and its attendant annoyance, frustration, and disappointment. For example, although a tortfeasor is liable for devaluation of property even when his activity is reasonable and faultless, loss of use and enjoyment of property is actionable only if it is "substantial," that is, continual or frequently recurring.[55] Mental anguish as a result of apprehension of danger has been compensated,[56] but the courts have drawn the line at what to them are trifling discomfort or mere inconvenience,[57] but may be considered substantial by the person subjected to them. As mentioned above, noise is an example of a phenomenon whose effects are often considered too subjective or problematic for compensation.

Confusion and uncertainty surround the question of what economic losses are recoverable as a result of pollution incidents. Until recently, the courts refused to compensate economic or financial losses that did not flow directly from physical injury to the claimant or injury to the claimant's property (usually referred to as "pure" economic losses).[58] With the exception of interference with an employee causing economic loss to his employer,[59] there was no liability for negligent interference with contractual relations. Nor could a plaintiff who lost a prospective economic advantage as a result of negligent activities of a person having no contractual relations with him have a claim against that person. According to Linden, the reasons for denying liability are: one, the courts consider economic interests less worthy of protection than bodily security and property; two, it may be efficient for those who incur such losses initially to absorb them than to shift them to the activities that produce them; and three, economic losses are "too remote."[60] Probably the major reason the courts have refused to recognize pure economic losses is that they can be extremely unpredictable and costly and there is no guarantee that liability will not greatly

exceed the ability of the person engaged in the activity to pay.

Recently, there have been two developments that have reopened the question of liability for pure economic losses. First, a few courts have allowed claims for such losses by tacking them, however feebly, on to some tenuous property interest or narrow damage to property,[61] and by creating an exception when economic loss results from the failure of a manufacturer to warm the user of his product of a hidden defect.[62] Secondly, both judges who favour extending liability to pure economic losses and those who do not have abandoned the tortuous reasoning of "remoteness," "directness," and "unforeseeability" for clearer thinking. One judge has said, for example, (albeit in dissent), that economic losses are clearly a foreseeable result of the negligent cutting of an electricity cable providing power to a number of factories and businesses.[63] Another judge, who favours excluding economic losses, has been blunt in saying that no matter how negligent a defendant may have been or how deserving a plaintiff, the courts are simply unwilling to open the door to the possibility of imposing widespread, large-scale damages on a single operator. He was frank in saying that it is a matter of public policy rather than of remoteness or foreseeability, that "the risk should be borne by the whole community who suffer the losses rather than just on one pair of shoulders... There is not much logic in this but it is the law."[64]

A public policy, developed in a simpler age, that imposes a rigid rule that the community who suffer losses should bear them may not reflect the public policy needed in a complex, interdependent society in which a single industry can impose substantial risks on a large community that that community is helpless to avoid. It is suggested that, in the case of economic damages and other interests in environmental and public health protection not sufficiently recognized by common law, either the courts should make an inquiry into the circumstances of each case that would enable them to reach a fairer result in the circumstances, or, perhaps preferably, the legislature should establish systems of shifting such losses from the "whole community who suffer the loss" to the community as a whole or to the community of persons creating the risk and profiting from it.

Measurement of Damages — Traditional methods of calculating compensation also tend to increase the length, cost, and uncertainty of the litigation process and to discount non-material losses that may be very important to the victim.

The usual measure of damages for destruction of property is the diminution in value caused by the wrongful act or the cost of replacement or reinstatement (in the case of nuisance, the cost of abating it).[65] The court may choose between these remedies.[66] Where the cost of reinstatement is substantially greater than the value of the property destroyed, the court will often decide that it is reasonable to award the lesser amount.[67] This method of measuring damages does not take into account the special attachment of a property owner to his land or the invasion of privacy implicit in such destruction. Beyond physical destruction, pollution may cause loss of use and enjoyment of the land. Only if the loss is actionable in nuisance may the occupier also recover damages for his annoyance, inconvenience, and discomfort. In any event, apart from monetary losses, such as loss of rents or profits obtained from use of the land, these losses are likely to have little value placed on them by the courts. The householder who cannot enjoy his yard or grow flowers or eat the vegetables grown in his garden because of pollution is likely to receive little compensation for his year-to-year loss of use and enjoyment of his property. The difference in the quality of his life at this homestead with and without the continual intrusion of pollution is not a matter of great concern to the courts.

In reality, the injury experienced by the person who decides to sell his home to escape continuing pollution impacts is greater than the loss in market value of his home as a result of its proximity to the pollution source or the replacement value of a similar home in an unpolluted neighbourhood. The real value of a home includes the value of roots established in a neighbourhood or community. The real loss incurred in selling a home and relocating includes the stress felt by each member of the family in severing ties with friends and associates and adjusting to unfamiliar surroundings.

To the extent that ongoing loss of use and enjoyment are given an economic value by the present legal system, this is done primarily through reassessment of property for taxation purposes, resulting in a loss of government revenue, rather than by compensation paid by the polluter.[68]

The measurement of future losses is also an area of difficulty. Damages for prospective losses are generally recoverable, but continuing wrongs are an exception. In the case of continuing torts, such as many ongoing factory emissions and other nuisances, damages are available only for losses up to the time the action is commenced (or, in some cases, the time damages are assessed by the court). In such cases, the plaintiff must launch a fresh action periodically and prove his case anew each time he suffers substantial loss,[69] unless the nuisance is so severe that the court will grant an injunction. When factories

sporadically emit noise, dust, or foul odours at irregular intervals, with no substantial nuisance in the interim – a common occurrence – it is seldom possible for the plaintiff to establish sufficient damages to justify either an injunction or such ongoing litigation.

Even when future damages are available, the problems of assessing them are intractable. In the context of personal injury awards, it has been suggested that, where injuries are serious, the court's assessment of damages must necessarily be wrong because of all the variables involved.[70]

The Supreme Court of Canada has suggested that the measurement of damages for personal injury "cries out for legislative reform."[71] In a case in which the plaintiff suffered surgical injuries resulting in permanent paralysis as a result of a fall, Dickson, J. stated:

> The expenditure of time and money in the determination of fault and of damage is prodigal. The disparity resulting from lack of provision for victims who cannot establish fault must be disturbing. When it is determined that compensation is to be made, it is highly irrational to be tied to a lump-sum system and a once-and-for-all award.
>
> The lump-sum award presents problems of great importance. It is subject to inflation, it is subject to fluctuation of investment, income from it is subject to tax. After judgement new needs of the plaintiff arise and present needs are extinguished; yet, our law of damages knows nothing of periodic payment. The difficulties are greatest where there is a continuing need for intensive and expensive care and a long-term loss of earning capacity. It should be possible to devise some system whereby payments would be subject to periodic review and variation in the light of the continuing needs of the injured person and the cost of meeting those needs . . . .
>
> The apparent reliability of assessments provided by modern actuarial practice is largely illusionary, for actuarial science deals with probabilities, not actualities. This is in no way to denigrate a respected profession, but it is obvious that the validity of the answers given by the actuarial witness, as with a computer, depends upon the soundness of the postulates from which he proceeds. Although a useful aid, and a sharper tool than the "multiplier-multiplicand" approach favoured in some jurisdictions, actuarial evidence speaks in terms of group experience. It cannot, and does not purport to, speak as to the individual sufferer. So long as we are tied to lump-sum awards, however, we are tied also to actuarial calculations as the best available means of determining amount.[72]

Class Actions — A class action is a procedural device allowing a plaintiff to sue on behalf of other similarly aggrieved persons. Canadian law now prohibits class actions in nuisance suits and generally in law suits for damages arising out of environmental degradation or contamination.[73] Thus, if a group of homeowners wants to sue a factory for covering their homes with soot inside and out, which would be a nuisance at common law, or if these same homeowners wanted compensation from the factory owner in the form of damages, they would each have to sue separately, at great expense; the class action would not be available to them. The requirement that each potential plaintiff launch a separate suit is a boon to the polluter who can settle each case separately, probably for a much lower sum than if he had to deal with an organized group.

Limitation Periods — Limitation periods have caused oppressive results for plaintiffs suffering personal injury, loss of revenue, and property damage because of contaminants in the workplace and harm to the environment. In cases where the plaintiff has not become aware of any damage until after six years from the time when the cause of action accrued, he has been deprived of any recourse to the courts for any loss incurred prior to the six-year period. In cases where the source of contamination cannot be readily discovered, as is the case with many spills, or where damage does not become manifest until more than six years after exposure to a contaminant, as is the case with many chronic illnesses and gradual ecological changes, the present common law limitation period as enshrined in provincial statutes may be too short. Limitation periods may also result in hardship when damage occurs in physically remote areas, or when potential plaintiffs live in remote areas, are nomadic, are members of a culture other than the dominant culture, speak a language other than the dominant language of the country, are impoverished, are members of a community in which litigation as a method of dispute settlement is not understood because of cultural differences or is proscribed (perhaps as a result of religious beliefs), or belong to a community that is in a process of disorganization and deterioration (perhaps largely as a result of the pollution itself).[74]

Aboriginal communities that have not been assimilated into the mainstream culture, for example, or impoverished plaintiffs in a jurisdiction not providing adequate voluntary or government legal assistance programs may find it difficult to retain and instruct counsel, collect the necessary evidence, and initiate legal action within the statutory limitation period. Such financial considerations, including the restriction of legal aid funds to cases where a person of "modest means" would spend his own funds if he had them to initiate action, lead to a delay in initiating actions where loss or injury at first appears minor,

and only manifests its full effects after a period of time.

The determination of the relevant limitation period applying to any particular case is not itself free from difficulty, as it depends upon the interpretation of the ambiguous term "cause of action." The damages recoverable in a civil action are limited to those suffered within six years prior to the issuance of a writ and afterwards. Any damages that accrued prior to this six-year period are not recoverable, although the action can be maintained with respect to the damages accrued after this six-year limitation period.

The limitation period for torts commences as of the date the cause of action "arises" or "accrues." Early cases describe this point in time unhelpfully as "the earliest time at which an action can be brought,"[75] and perhaps somewhat more helpfully as "after the occurrence of all the facts which the plaintiff must prove as part of his case, that is, that the term begins to run when the plaintiff could first have brought an action and proved sufficient facts to sustain it."[76] The interpretation of "cause of action" as the act of the defendant that gives the plaintiff cause of complaint rather than the plaintiff's knowledge of his injury led to a series of cases based on contract in which the right to action was denied because the harm was discovered more than six years after the breach of contract occurred. However, subsequent cases distinguish between actions in contract and in tort. They establish that in tort cases, the cause of action arises, at least in personal injury cases, at the time of the "injury."[77] This does not solve the problem for victims of industrial diseases because the time of injury is interpreted to mean the first actual occurrence of damage whether the plaintiff is aware of the existence of the damage or not.[78] Thus, the limitation period runs from the time the exposure to a contaminant began to affect the plaintiff, even though symptoms are not manifested or diagnosed so as to put him in a position to take legal action for recovery of damages.

The hardship entailed by this rule can be mitigated in cases where a defendant has fraudulently concealed facts from a potential plaintiff,[79] or where the "cause of action" can be characterized as a continuing one. Some cases have held that where there is a continuing activity resulting in repeated incidents that cause injury, each incident is a new cause of action for which a law suit may be commenced. For example, where a municipality constructed a dam, which resulted in flooding of the plaintiff's land every spring, the Ontario Court of Appeal held that the right of action accrued not when the dam was built, but when the plaintiff's lands were flooded, so that there was a new cause of action each spring.[80]

Law reform commissions that have studied the question of limitation periods have generally recommended shortening the limitation period for claims arising out of bodily injury or property damage to two or three years, but have recommended that some provision should be made to postpone or extend the running of time where the plaintiff is not aware that he has a cause of action.[81] However, attempts at reform have created further difficulties. The case of *Cartledge v. Jopling*[82] illustrates both the hardships a short limitation period may entail and the continued difficulty in interpreting when a cause of action arises. The *Cartledge* case was decided under the 1954 English Statute of Limitations, based in part upon the recommendations of a committee that studied the limitation of actions in 1949.[83] The Tucker Committee recommended a two-year limitation period in personal injury actions but also recommended a procedure for exceptional cases, which would permit the judge to exercise discretion to allow actions to be brought after the two-year period has expired.

The 1954 English statute, perhaps as an attempted compromise between the recommendation of a two-year limitation period and that of an extension procedure, provided for a three-year time period with no extension provision. The inevitable "special case" arose. In *Cartledge*, the defendants were manufacturers of steel castings who contravened occupational health and safety legislation by failing to provide effective ventilation. As a direct result of this breach of law, certain workers, including the plaintiff, developed silicosis. Symptoms were not evident and their condition was not discovered until six year after their employer had installed proper ventilation. The House of Lords held that the first actual occurrence of the damage marks the beginning of the limitation period whether or not the plaintiff is aware of the existence of the damage. The plaintiff was accordingly held to be out of time, and his action dismissed.

As a direct result of this case, the English statute was amended in 1963 to provide for an intricate set of provisions for the extension of limitations. The British Act provides for an extension period where there is a claim for potential injury (to which the three-year period applies); or if the material facts to the claimed cause of action were, or included, facts of a decisive nature that were outside the knowledge (actual or *constructive*) of the potential plaintiff.

The provisions of this statute were adopted in Manitoba and have been recommended for adoption with varying degrees of modification by the law reform bodies of New South Wales, South Australia, Scotland, and Ontario. However, they have been described by Lord Denning as "very complicated and obscure"[84] and rejected by the British Columbia Law

Reform Commission[85] in favour of a modified version recommended by the New South Wales Law Reform Commission.

Although it is generally agreed that the shortening of limitation periods should be accompanied by some extension procedure, there is a wide divergence of opinion as to the nature of that extension mechanism. Controversy centres around the extent to which judicial discretion should be involved, whether the extension should be general or restricted to areas of law where oppressive results can be anticipated, the balance between simplicity and clarity as opposed to precision, and whether the possibility of extension should be open to the plaintiff indefinitely or itself subject to a limitation.

The most difficult issue has been the extent to which knowledge of material facts should be imputed to the potential plaintiff or to which he should be under some duty to take steps to ascertain the relevant knowledge as a basis for obtaining an extension. Both the Ontario and the British Columbia Law Reform Commissions were in favour of basing a right to apply for an extension upon the test of when a reasonable person would have knowledge that would lead him to initiate action. However, one British Columbia Commissioner dissented from this subjective test and recommended instead an objective test of knowledge: "The availability of postponement should be governed by the actual state of knowledge of the potential plaintiff, not by the hypothetical state of knowledge of the hypothetical reasonable man."[86]

While arguments can be made that a person should not be able to delay initiation of his action indefinitely and hold the potential defendant in a state of uncertainty by claiming that he did not know of facts that would have been patently obvious to any reasonable person, it is also clear that to impose a "reasonable man" test can also create difficulties. For example, a construction crew places a portable asphalt heating plant under a tree for an extended period of time. The heat damages the crown of the tree, resulting in a gradual loss of vitality and eventual death of the tree. However, the injury will not be apparent to the naked eye for three years, by which time the limitation period will have run. The same delay in the manifestation of injury might result if the roots had been severed, exposed, deprived of water, flooded, or damaged by underground migration of methane and other gases.

Although the damage would not be visible to the unaided senses, it would be apparent using aerial infrared photography. In such a case, what steps should the reasonable man have to take? If he could have known about the harm within the limitation period by employing infrared photography, does his failure to know this, or to do so if he is aware of the technique, deprive him of an extension of the limitation period?

Availability of Funds — If a tortfeasor has sufficient assets or insurance to pay a judgment awarded against him, the judicial system provides mechanisms to facilitate execution of judgments and to penalize recalcitrant judgment debtors. As mentioned above, however, the tort system provides no method of ensuring that funds are available to satisfy a judgment if the defendant has insufficient assets or third party liability insurance. Only in isolated instances in which the tort system has been supplemented by legislation requiring proof of financial responsibility, compulsory insurance, and other forms of security, or legislation establishing government insurance schemes, or compensation funds does the plaintiff have any assurance that the person legally responsible for pollution-related loss will be in a position to satisfy a judgment awarded against him. Even when a tortfeasor is insured, the insurance system may not ensure recovery and may even impose barriers between the plaintiff and recovery of compensation. Insurance, both as an independent source of remedial funds available to the potential victim of pollution and as an adjunct to the tort system, is discussed below.

The Insurance System

Voluntary private insurance available to the potential victim of pollution and to persons who engage in activities that may cause pollution plays a role as a source of remedial funds in pollution situations. In some cases, insurance is an alternative source of remedial funds available through his own insurance policy to the person harmed. In other cases, it is a source of funds available to the polluter to satisfy any tort liability for compensation he may have.

Insurance involves spreading the risk of a loss or injury resulting from a particular occurrence or "peril" or a set of occurrences or perils among a large number of people who are exposed to it. Two broad categories of insurance provide some protection against the risk of pollution damage. The first is named in accordance with the period or risk it covers, the risk that a person's activity will result in liability for damage caused to some third party, and is therefore known as "liability insurance." The second type of insurance, for convenience, may be described in terms of the person who carries it as "first party insurance." This is insurance obtained by the person susceptible to suffer some harm. This harm may result from another person's actions for which that person may or may not be liable at law or from some natural phenomenon or accident for which no one

may be liable at law. Thus, potential victims of pollution may take steps to protect themselves against loss, or the person engaging in activity likely to result in pollution damage to a third party may acquire insurance to indemnify himself against his potential liability to that person injured. In some cases, both the person injured and the person causing the injury may have insurance policies that would be available ("respond") to provide coverage for the same event. Insurance policies specify that the victim of injury or harm may not have a double recovery as a result of the existence of more than one insurance policy covering the same eventuality; however, the existence of multiple insurance policies may speed up recovery and increase the overall amount recovered when either policy alone does not cover the full loss.

First Party Insurance

First party insurance policies available include life insurance, personal accident insurance, medical insurance, fire insurance, and comprehensive motor vehicle insurance. Insurance may be described in terms of the peril insured against – for example, fire, lightning, tornado, hail, strikes and riots, non-performance of contract, and theft – or in relation to the property interests protected – for example, loss or impairment of existing property interests, loss of property interests expected to accrue (profits), or loss of earning power.

Most of the insurance policies in common usage eventually pick up some popular name that describes the property they cover, the type of person covered, or the peril they guard against, such as "crop" insurance, "householder's," or "fire" insurance. There is no first party insurance policy popularly known as "pollution" insurance. This is partly because the concept of pollution comprehends many different kinds of phenomena, and partly because not enough people suffer substantial damage from pollution with sufficient frequency to create a demand for separate coverage of this risk.[87] An insurer needs a very large number of "exposures" to be able to estimate an average experience from which he can reliably predict the number of losses he might be required to cover and their size as a basis for developing a realistic premium. The lower the risk of an event occurring and the less reason an average person would have for buying insurance, the larger the group of insured needed for the insurer to be able to sell the coverage at a premium which fairly reflects the risk.[88]

The lack of any distinctive "pollution damage" policy is probably due, therefore, to a combination of the unlikelihood that any particular person would be subjected to pollution injury, the consequent high premiums required to "write" such a policy and the coverage for pollution incidence provided by existing popular forms of first party insurance, particularly "all-risk" policies. Three kinds of insurance that would appear to have some relevance to the potential pollution risk are household insurance, business insurance, and accident insurance. The author has not undertaken any investigation to determine to what extent these commonly available kinds of policies might cover pollution hazards. Nor, as mentioned, has the insurance industry, although the opinion has been expressed that such first party policies probably cover many pollution incidents. Such a study might be useful in establishing the extent to which first party insurance assists victims of pollution. In the absence of such a study, however, it is still possible to note many of the characteristics of first party policies that would limit or render uncertain their utility for ensuring compensation for pollution victims, and to point out some examples where coverage has been denied.

First party insurance, unlike liability insurance, which is available only as an extension of tort liability, exists independently of other compensation systems. Availability of funds to the victim of pollution is ensured by the provisions of the insurance contract and the general law of contracts. These are backed up by federal and provincial insurance legislation requiring insurance companies to keep on hand a deposit to ensure availability of sufficient funds to meet any likely claims, requiring them to maintain assets in Canada sufficient to answer for their obligations in Canada, and establishing a federal Department of Insurance, and an office of the Superintendent of Insurance, whose responsibilities include making an annual examination of each insurance company.[89]

The tort system also contributes to the availability of funds and the viability of first party insurance. The insurer, who accepts initial responsibility to compensate his insured for losses, is subrogated to the insured's right to pursue any third party legally liable for the loss. Therefore, the insurance company may ultimately recover some portion or all of its payments to its insured where the injury results from the tortious act of a third party.

As mentioned above, no information is available about the extent to which existing first party insurance policies designed for other specific risks also cover pollution damage. The statistical loss categories maintained by the insurance industry do not identify pollution phenomena such as spills or isolate them as contributing factors to other causes of losses.[90] However, it is clear that pollution is not

specifically excluded from most first party policies, and insurance industry representatives advise that many aspects of pollution damage are in fact covered.[91]

First party insurance therefore appears to be a useful device to provide remedial funds to victims. However, recovery of insurance benefits is not automatic and, in recent years, there have been well-publicized examples of situations in which holders of first party insurance who suffered losses as a result of pollution incidents complained of difficulty in obtaining timely redress.[92] There are functional and legal limitations to the insurance contract, which may result in compensation not being paid, or a limitation on the amount recoverable. Insurance policies are based on standard forms developed by the insurance industry and are one-sided contracts. Apart from statutory protection of the consumer, most people who buy insurance have relatively little control over the terms of the policy.

> In large part, . . .(the insurance contract) is the product of concern of insurance companies to secure formal consistency, administrative convenience, and most important, control of the terms. For most people who take out insurance policies a significant degree of bargaining is an impossibility. A regime is imposed upon them if they want the protection provided, with only the extent of the coverage, the level of financial protection and the duration of the policy left to discussion. In common with other standard form contracts, insurance policies ignore the shortcomings of the consumer's knowledge and experience. Typically they are full of detail and technical terms, printed for use with a microscope, and beyond the patience of most mortals.[93]

Payment of first party insurance benefits involves the same problems of causation, remoteness, foreseeability, and scope of damages as establishment of tort liability. Payment is not required unless there is a causal link between the loss suffered and the peril insured against. The typical insurance contract states that the insurer is only liable for "direct physical loss or damage" caused by the listed perils, or contains similar wording. In the event of a dispute between the insurer and the insured, the courts apply similar tests of causation to those applied in a common law action in tort. The courts will attempt to determine from the circumstances whether the peril was a factor in causing the loss, and if so, whether the loss was closely enough associated with the peril that it is reasonable to make the connection at law. In some cases, the court may have to determine whether the peril insured against actually took place and, if so, whether it was the dominant cause where two or more events overlapped. The court may distinguish between an event "causing" and an event that merely "facilitates" a loss. If the loss is aggravated by subsequent events, the court may have to decide whether the subsequent events flow from the operation of the original peril or from an independent contributory factor that cannot be ascribed to the original cause.

Other factors that may affect the extent of recovery include the requirement that the insured have a recognizable legal interest in the subject of the insurance (insurable interest), difficulties in assessing the value of the loss, and the "good faith" of the insured, including his obligation to report to the insurer any material change in the risk. An insurance contract may be voided if the insured does not report risks or losses of which he may be aware in a timely manner. The stringency of this obligation has been described as follows:

> Regrettably, the law has by and large failed to promote (a responsibility on the insurer to see that he is adequately informed) preferring to impose a rather draconian burden of communication on the insured. Despite the promise of earlier decisions, . . . which viewed in a balanced fashion the responsibility of the insured to disclose material facts and refused to fault the insured for failing to reveal facts within the actual or constructive knowledge of the insurer, the common law subsequently developed in such a way that the insured has an almost absolute responsibility to disclose, whether or not he appreciated that the fact was material, and whether or not he was asked a question on it.
>
> Not only is a full burden of disclosure placed upon the insured by the common law when he provides information, it has to be correct.[94]

Moreover, exclusions and deductibles may prevent recovery. Most insurance policies exclude a large number of perils, which may include pollution in some circumstances and exclude it in others, depending upon the source and the nature of the pollution. Finally, the deductible portion of an insurance policy is generally high enough to ensure that the insured rather than the insurer bears the full loss or a substantial proportion in most cases. First party insurance, therefore, frequently leaves the insured in a position of absorbing his loss or seeking his common law remedies against the polluter for the deductible portion.

While voluntary first party insurance may therefore provide compensation to the victim of pollution in some circumstances, it may cover only a portion of his loss, or his loss in others may be completely excluded. The Mississauga derailment provided an illustration of the limitations of first party householder's and business interruption insurance. In November 1979, a train was derailed in Mississauga, Ontario, carrying in close proximity to each other a tank of propane gas, which exploded resulting in a

fire that continued to burn for several days, and a tank of liquid chlorine. The chlorine, if released as a gas into the atmosphere as a result of further explosions or of the fire, could cause human death. In anticipation of this possibility, government authorities evacuated approximately 240,000 people for periods of up to seven days. Losses to the evacuees included the cost of alternate accommodation and meals, and lost wages. In abandoned homes and businesses, there were some losses resulting from looting, as well as spoilage of food in residences and of perishable stock in abandoned business premises. There was some concern that pets left behind have suffered harm. A variety of businesses and industries were shut down, including a major automotive manufacturer and a public utility producing hydro electric power for domestic use and export.

The feared escape of chlorine gas did not occur. Damage to residential property was not therefore a "direct physical result" of the fire or of the escape of any pollutant. The damage resulted instead from the voluntary evacuation of homes and businesses and from the evacuation under orders from civil authorities, which may or may not have been within their legal jurisdiction to make. As a result, insurance industry spokesmen said that residents some distance from the explosion would not be able to claim for out-of-pocket expenses under the "extra living expense" coverage of the standard homeowner's or residential policy, as the policy excludes coverage where there is no physical damage to the residence.[95]

Similar exceptions apply to businesses making claims under the "damage, theft and business interruption" coverage in commercial insurance policies. One spokesperson stated that, while the insurance would apply in cases of damage caused by vandals, forceable entry, and theft of contents, it would not cover broken windows, water damage (for example caused by taps left dripping or overflowing water), or damage caused by sewer backup as a result of the need to abandon the local sewage treatment plant.[96]

Thus, if residents and businessmen had left their homes or businesses as a result of fire or other damage to the building or to nearby buildings which rendered the dwelling or business uninhabitable, insurance would cover losses occurring as a result of this abandonment; whereas, if residents or businessmen left voluntarily or were ordered to leave to avoid the possibility of contamination that did not come to pass, many damages would not be covered under the terms of the insurance policy. Press descriptions of the reasons for the refusal by insurance companies to cover out-of-pocket expenses are unclear; however, they appear to revolve around a clause in the additional living expense and business interruption clauses, which states that coverage applies "while access to the described premises is prohibited by order of civil authority *but only when such an order is given as a direct result of damage to neighbouring premises by a peril insured against.*" Apparently, escape of a toxic gas that may be harmful to health is not a peril insured against in standard policies, nor did the losses result from direct physical damage to the insured's premises or neighbouring or adjacent premises.

Pre-paid Legal Insurance — Although insurance is available to persons allegedly responsible for pollution in some cases to cover the costs and expenses of litigation including lawyer's fees (see below), no such insurance is available to the victim of pollution to cover the cost of legal fees if he chooses to sue a polluter for civil damages. Pre-paid legal insurance is in its infancy in Canada and is not yet widely available. Policies now being developed will not cover legal fees for this purpose.

Third Party Liability Insurance

Conventional Third Party Liability Insurance — Conventional policies cover many spills but exclude most routine emissions of contaminants.[97] As a result of major oil spills in the late 1960s insurance underwriters realized that they were subjecting their companies to unanticipated large risks from possible claims arising out of damage caused by emissions of pollutants into air and water. Standard insurance contracts were amended to exclude all coverage of oil and gas activities and ongoing, gradual pollution. Coverage for routine emissions and activities such as disposal of waste by landfilling, which may result in gradual contamination of air and water over a long period of time, was available only at a prohibitive premium. Standard coverage was restricted to pollution incidents that are "sudden and accidental"; that is, to unexpected incidents out of the ordinary course of events. General liability policies containing a pollution exclusion clause cover bodily injury as well as "tangible" and "intangible" property damage caused by accident and occurring suddenly.

Although there is no general requirement in Canadian law that businesses carrying on activities that might result in pollution must carry insurance, there is evidence that the general liability insurance carried by most businesses is sufficient to cover most losses foreseeable as a result of spills that are sudden and accidental. Coverage of up to $10 million for a single spill and $20 million in the aggregate per policy year is available. The largest oil spill, for example, to have effects in Canada cost $9 million.[98] However,

the potential damage from a spill in a particularly vulnerable location greatly exceeds standard coverage carried by most small- and medium-sized businesses.

Environmental Impairment Insurance — Growing market demand led a few insurance and reinsurance companies to provide "total pollution cover" policies in the mid-1970s. The Clarkson Group, backed up by three large European reinsurance companies was the first to provide this coverage. Its Environmental Impairment Liability (EIL) insurance policy is available in Canada through a Canadian broker and is considered to be the standard policy in the field.

The term "environmental impairment" used in the policy covers most phenomena commonly known as pollution. "Environmental impairment" is defined as:

> The emission, discharge, dispersal, seepage, release or escape of any liquid, solid, gaseous or thermal irritant, contaminant or pollutant into or upon land, the atmosphere or any watercourse or body of water;
>
> The generation of smell, noises, vibrations, light, electricity, radiation, changes in temperature or any other sensory phenomena arising out of or in the course of the insured's operations, installations or premises all as designated in the Schedule.[99]

The policy is intended to cover gradual pollution resulting from deliberate, continuous, legal plant emissions whose adverse impacts are not foreseen; that is, "residual impairment" resulting from the emission of pollutants in tolerable or tolerated quantities, which current pollution abatement techniques cannot totally eliminate; "synergistic impairment" due to a harmful mixing of the insured company's tolerable emissions with equally tolerable emissions by other companies; and "contingent impairment." This is harm caused by substances considered harmless at the time the insurance policy is issued but later discovered to cause injury, or whose harmful effects are considered tolerable at the time of insurance but are later regarded as intolerable, not through scientific advances, but because of changes in the social context.

The policy is not intended to cover "willful" pollution, which the insurer describes as "the grossly negligent disregard of the consequences likely to arise from conscious non-observance of regulations designed for the environment's protection."[100] Nor is it intended to cover activities known to be particularly hazardous or spills during transportation of hazardous substances (which, as stated above, are often covered under conventional policies). Thus, the policy contains a number of exclusions, including war risks, nuclear activity, virtually all modes of transportation, illegal activities, intentional acts, and fines, penalties, and punitive damages. Exclusions also apply to the operation of airports, offshore oil and gas wells, pollution of the insured's own property and injury to his own employees, product liability, and genetic damage. However, some of these latter exclusions are negotiable. That is, coverage may be purchased at higher premiums in cases the insurers consider "good risks."

Because the policy relates to "unforeseeable" risks and because of its newness, actuarial information upon which to base premiums is virtually nonexistent. Instead, coverage is based upon a scientific analysis of potential risks from specific contaminants and the likelihood that various industries might emit any of them, as well as on a detailed examination of individual applicants for coverage.

The maximum coverage available is $7.5 million (U.S.) per claim and $15 million (U.S.) in the aggregate per policy year. Deductibles are negotiable but, because of high premiums for the first few million dollars, many large corporations are self insurers for the first four or five million dollars. (This is also true of conventional liability coverage.)

Relatively few EIL policies have been issued in Canada. This is undoubtedly due in part to the cost and novelty; however, Morrison suggests that the major reason is the lack of incentive to purchase coverage under the current legal regime, which makes it unlikely that victims of pollution will sue successfully: "Given the low probability of compensatory payment as compared to the premiums anticipated under EIL, it would make economic sense from the industry's point of view, to defer EIL."[101]

The kinds of harm or injury to third parties covered by EIL are generally coextensive with civil liability under the tort system. Cover applies to "impairment or diminution of, or other interference with, any right or amenity protected by law," as well as personal injury, including death, and property damage. The policy also indemnifies the holder against cleanup costs incurred as a result of legal obligation or to prevent an insured loss, and costs and expenses of litigation.

Limitations of Conventional Liability Policies and EIL Insurance

The primary responsibility of insurance companies is not to the injured third party, to whom they have no legal relationship, or to their insured, but to their owners and shareholders. It is in their interests in many circumstances to avoid payment. A number of factors make recovery by the victim of pollution uncertain even when the polluter is insured.

The exclusions in both forms of policy make it likely that funds will be unavailable in many cases. In particular, the fact that the insurer is liable only where the harm does not result from a breach of law, may be a broad "escape" for insurers, as some Canadian jurisdictions have statutes with provisions making virtually all pollution that may cause substantial harm unlawful, in theory, if not in practice.[102] Breach of any term or condition of the insurance policy by the insured also releases the insurance company from its obligation to indemnify. No insurance company will waive this particular condition of the policy. The author was unable to obtain any information from the insurance industry about the frequency of insurers withdrawing coverage on grounds of breach of law or breach of policy, as the industry claims to have no statistical information about this.[103]

Insurance companies also retain the option of cancelling an existing policy at their absolute discretion on very short notice during the term of the policy and to refuse to renew coverage at the end of a term. Almost every insurance policy has a cancellation clause. Under Ontario law, the insurer must give the insured a minimum of five days hand-delivered notice or fifteen days by registered mail before cancelling certain kinds of policies regulated by statute. In practice this is likely also to be the maximum notice. The insured may negotiate an extension of this period to a more reasonable time such as 30, 60 or 90 days. In rare cases, the insurer may agree to no cancellation for up to a year; however, one insurance consultant has stated that: "I have not, in my experience, encountered a period of longer than one year with provision for cancellation or an escape clause for the insurance company in the form of, say, the option to renegotiate the premium, which opens the door for them to impose such a punitive premium increase that it in effect becomes cancellation."[104] The insured also has a similar option to cancel during the term of the agreement. It is not generally in his interest to do so as long as he is carrying on an operation that may result in pollution but, if he does cancel, this will deprive the injured person of any source of funds out of which to obtain redress for any claims made after the cancellation.

All liability insurance policies are for a fixed term. They usually cover only claims made during the term of policy. If either party at the end of the term omits to renew or chooses not to renew the policy immediately, there may be a hiatus in coverage of indeterminate length. Any pollution manifesting itself after a policy has been cancelled or has expired will not be covered by that policy. In the case of pollution that may manifest itself long after operations have ceased – for example, migration of leachate from a sanitary landfill site, which may take place decades after the site has been closed – it is therefore important to ensure that insurance coverage is maintained for this period of time. Generally, the law imposes no obligation on either party to maintain such coverage after operations cease.

An insurer has no obligation to indemnify the insured against any claims arising during the term of coverage as a result of events before coverage started. Standard policies require the insured to answer the question whether it has any knowledge of any circumstances that would subsequently give rise to a claim. If the insured denies knowledge and it is subsequently revealed that a person in a position of responsibility had knowledge of circumstances that might give rise to a claim, the current insurer will be entitled to refuse to indemnify the insured. Any previous insurers also will probably not be responsible.

In particular, the continued availability of EIL insurance is not assured. Similar insurance may not be available at a manageable premium to replace cancelled or expired insurance, depending upon the current climate of the insurance market and experience. Because it is difficult to predict loss experience in this field and set actuarially sound premiums, insurance companies may at any time refuse to underwrite this type of insurance and invest in insurance providing a more evenly predictable rate of return.[105]

A further limitation is that third party liability insurance covers only harm for which it has been established, in the judgment of the insurance company's solicitors, or through tort action by the injured person against the insured, that the insured has civil liability. The Clarkson policy, for example, states ". . . the insurers agree to indemnify the insured against all sums which the insured shall become *legally liable* to pay in respect of claims made against the insured for compensation in the event of (a) bodily injury and/or illness; (b) loss of use or loss and impairment or damage to property; (c) impairment or diminution of or other interference with any other right or amenity *protected by law*, . . ." (emphasis added).[106]

Moreover, the insurer may be an influence against expenditure of funds by the insured company to clear up damage and restore the environment. The insured will be reluctant to expend any funds for which the insurer has not agreed to indemnify him; however, the insurer may not want to commit itself to indemnify expenditures until it has had an opportunity to receive the advice of its legal and scientific advisors as to whether the expenditure is necessary or advisable in the circumstances. If the actions required to rectify

the situation are extensive, the insurance company may attempt to settle the claim and avoid the expense of this undertaking. The injured person, who will likely not have the same resources available to him, may not have similar access to legal and technical expertise, and may inadvisedly accept an inadequate settlement. As neither the injured person nor any of the other actors involved in the traditional insurance system represents the interests of protecting the environment beyond the property and amenity interests of the injured person, the settlement in such a case may fall short of rectification of environmental damage.

Conventional and environmental impairment liability insurance, therefore, do not necessarily ensure the availability of funds to the victim or timeliness of recovery, and may even promote delay. Some insurers state that insurance results in rapid settlement,[107] while others state that delay in settlement may be in the insurance company's interest.[108] It appears that insurance companies settle claims quickly when it is advantageous to them to do so, and delay when liability is questionable or when they feel payment can be avoided for other reasons.

Such insurance policies provide the insured with two services, indemnification and defence. Upon being advised of a claim, the insurer provides legal defence and adjustment services to the insured. This involves the determination of facts to assess whether the insured is in fact legally liable. If there is a clear indication that the insured corporation may eventually be found legally liable, the insurer may elect to make an early settlement and minimize the costs of defence. However, if, in the insurer's opinion, the company has a good defence, if the settlement of the claim may encourage further claims in this case or in similar cases, or if it is financially advantageous to the insurer to delay settlement for the purposes of retaining investment capital for as long as possible, the insurer may elect either to make a vigorous defence or to delay payment. Some insurance company and industry representatives state that valid claims are paid expeditiously. However, it has also been suggested that the most likely procedure for an insurer to follow in the event of a pollution claim is to adopt a "wait-and-see" attitude.[109]

As an extension of the tort system, the liability insurance system provides no additional basis for civil liability, beyond the traditional causes of action. To enhance the usefulness of the insurance system to victims of pollution, either as a supplement of the tort system or as a full or partial replacement for tort liability, a number of strategies can be employed. Some of them are illustrated by pollution-related compensation systems described below. These strategies include:

- Legislation expanding civil liability for pollution-related damage to provide firms with a greater incentive to purchase insurance and to create a greater market for it.
- Statutory provisions restricting the circumstances in which insurers may cancel policies or refuse to indemnify the insured as a result of breaches of the law or of terms and conditions of the policy.
- Statutory provisions requiring operators to maintain specified amounts of insurance or provide other forms of proof of financial responsibility.
- Provision of insurance by government in cases where insurance is required but the private insurance industry fails to respond.
- Establishment of no-fault insurance schemes, perhaps on the model of recent initiatives in automobile insurance.
- Legislation requiring insurers to provide certain kinds of insurance as a condition of obtaining or maintaining a licence to carry on business in the jurisdiction.
- Requiring potential victims of pollution to acquire and maintain specified amounts of first party insurance against pollution-related damage, thereby creating a market.

These strategies, of course, will have varying degrees of political acceptability, the last two being particularly objectionable as draconian. In the event that the insurance industry fails to respond to meet the need, it may be necessary to consider methods of providing funds other than insurance, some examples of which are described below.

Conclusion

While there is no conclusive evidence of the extent to which the combined torts system and private insurance provide remedial funds for victims of pollution, there is a widespread perception among the public, the press and the practicing and academic members of the legal profession that many losses are not compensated and that there is a need for reform. Clearly, torts and liability insurance are unwieldy, inefficient, and costly. Their common reliance on a set of stringent criteria for establishing proof of civil liability results in great delay and uncertainty. It does not appear necessary to the author to require statistical evidence of the number of injuries or claims uncompensated or inadequately compen-

sated to conclude that the system provides neither full, fast, fair compensation nor an incentive to avoid polluting. In light of the numerous problems the current system entails, it is unlikely that anything less than major changes will be effective. What is needed is a much less adversarial system that maintains a sufficient nexus between the activities of those responsible for pollution and liability for payment of compensation, without requiring the victim to undertake the psychological and financial burden of establishing this nexus.

A number of jurisdictions have begun to come to grips with solving this problem. The following section will discuss and evaluate some of the partial solutions that point the way towards a more comprehensive, uniform approach to compensation of pollution victims.

5 Alternative Pollution Compensation Systems: Discussion and Evaluation

The present regime for compensating victims of pollution is a patchwork quilt of common law causes of action (torts), private insurance, voluntary programs established by high-risk industries, and a variety of statutory schemes, each limited to a narrow subject matter. Torts and insurance have been discussed above. For the purposes of brevity, this paper will not discuss the voluntary schemes and many of the foreign schemes[1] and international agreements[2] that are well-documented elsewhere.

This chapter will discuss some of the recent and emerging statutory provisions that may point to directions to take in establishing a more uniform approach to compensation. The large number of variables involved in the concept of pollution damage and its control make it difficult to design a single compensation system that will take into account all the kinds and sources of harm and classes of victims that may be encountered. The difficulties include problems of extracting unifying themes and principles from the historic development of the tort system in several different directions, the difficulty of integrating statutory remedies with the existing tort system, the existence of more than one level of government with jurisdiction and overlaps among jurisdictions, and economic, political, and competition implications of regulation, as well as the diversity of substances, sources, processes, systems, causes, and effects comprehended by the term "pollution."

Until recently, when legislators considered compensation, they did so in the context of solving specific, narrow problems. Compensation is treated as an incidental matter addressed in statutes dealing primarily with other aspects of environmental protection. Present compensation provisions are scattered throughout a variety of statutes, with little attempt to deal with the subject in a systematic or comprehensive manner. Rather than promote the continued proliferation of such provisions, it appears advisable to consider establishing a uniform system providing broad coverage of pollution risks, that would recognize the risk inherent in all stages of production, handling, and disposal of hazardous and potentially hazardous substances. In the alternative, if this is not possible, principles should be developed that would apply to the variety of schemes to provide compensation for loss from various sources of contamination to create some consistency, efficiency and equity among them.

The following discussion will establish the constitutional framework in which reform of the compensation system must be accomplished. It will also discuss and evaluate recent statutory reforms. This inquiry will provide an overview of the comparative scope of different approaches to reform, and suggest a preliminary model for systematically analysing the relative merits of existing and potential schemes.

The Canadian Constitutional Framework

The question of which level of government has jurisdiction to enact compensation legislation is not usually a problem; however, in certain cases, jurisdiction may be unclear. Under the British North America Act (BNA Act), jurisdiction to enact law is divided between the provincial governments and the federal government. Some matters are exclusively within the jurisdiction of the provincial governments, and some are exclusively within federal jurisdiction. The provincial governments and federal government share jurisdiction over other matters. Where jurisdiction is mutual, both levels of government can enact laws; but if the laws conflict, the federal law will override the provincial one to the extent of the conflict.

The BNA Act does not mention pollution or compensation as subject matters in its division of powers between the provincial governments and the federal government. Therefore, jurisdiction to enact a compensation scheme and to apply it to any particular pollution source or incident will depend upon which of the subject matters listed in the BNA Act is affected by the scheme and its application.

The provincial governments have authority to regulate businesses other than works and undertakings within the exclusive jurisdiction of Parliament. Whether this jurisdiction is exclusive or is shared with the federal government is unclear. Probably, regulation of the same pollution source by both levels of government is permissible to some extent, as subject matters within both federal and provincial competence are often affected. In practice, any direct, unilateral action to prohibit an activity causing pollution or to order a source of pollution to take action to abate the contamination is carried out by the provincial governments under provincial legislation. The federal government, except with regard to works, undertakings, businesses, and lands within its exclusive jurisdiction, usually restricts its role to research, data collection, establishment of demonstration projects, monitoring, and the establishment of air and water quality objectives and guidelines that are not legally binding. However, the courts have ruled that the federal government has exclusive jurisdiction to regulate pollution emitted from works, undertakings, and businesses under exclusive federal jurisdiction, such as ships, railways, and nuclear facilities.[3] Otherwise valid provincial pollution control provisions cannot apply to such sources.

The Supreme Court of Canada has stated that the provinces have authority under section 91 (13) of the BNA Act, which gives the provincial government exclusive jurisdiction over "property and civil rights within the province," to enact legislation establishing compensation schemes for pollution-related injury.[4] However, it has not been clearly established whether only the provinces can pass such legislation or whether the federal government also can legislate on the grounds of overlapping jurisdiction. For example, if a fishery is polluted, does the provincial government alone have power to enact legislation to facilitate compensation for fishermen, or can the federal government also legislate, as it did by 1977 amendments to the *Fisheries Act*, on the basis of its authority over fisheries? On the basis of recent judicial decisions, it would appear that the federal government has power to legislate civil liability only as an integral part of a regulation system covering a subject matter within its jurisdiction. If the courts find the tort liability aspects of the scheme to be unnecessary to proper regulation of the subject matter, it is possible the provisions creating civil liability or governing civil procedure could be struck down. Moreover, some kinds of power, such as the criminal law power, may be considered incompatible with civil liability. This area is in flux, and it is difficult to predict what the courts will do.

In practice, the validity of compensation legislation will depend upon a number of factors, including the source of the discharge, the location where the discharge begins, the location where the loss occurs, who suffers the loss, and who is required under the legislation to pay. The case of commercial fishermen is an example of the potential effect of location of the harm or occupation of the victims on the operation of a statute. Provincial legislation requiring polluters to pay compensation would be effective if a factory causes damage to a farmer's crops. If, on the other hand, a fishery were polluted by oil, causing damage to the nets of commercial fishermen, it is arguable that the legislation would not apply to this situation because of the exclusive federal jurisdiction over fisheries. The applicability of this legislation might depend on whether the courts rule that the subject matter of the compensation scheme is property and civil rights or fisheries. If the court rules that the subject matter is based on the section of the BNA Act giving the provinces jurisdiction over property and civil rights, the court might still have to decide whether the fishermen's claim was based upon their civil rights or their property rights. If the right of the fishermen to recover compensation is a civil right, this could provide a basis for the application of the legislation to the fishermen regardless of the federal jurisdiction over fisheries. If, however, the applicability of the legislation is based on the property aspect of section 92 (13), it is arguable that the legislation would apply to this case if the fishery were inland, and thus owned by the province, but not if it was a maritime fishery, owned by the federal government.

Legislative jurisdiction may also depend upon whether the pollution is intra-provincial, interprovincial, or international; that is, whether the loss is incurred within the province where the discharge originates, in a different province, or in a foreign country.

The Supreme Court of Canada considered the validity of provincial compensation legislation in the 1975 case of *Interprovincial Co-operatives Ltd. et al. v. The Queen in Right of Manitoba*.[5] A majority of the court ruled that *Manitoba Fishermen's Assistance Polluters' Liability Act*, 1970, was invalid insofar as it purported to affect interprovincial pollution.

The case arose out of legislation passed by the Manitoba government to provide compensation for fishermen deprived of their livelihood as a result of mercury contamination of a fishery. IPCO and Dryden operated chlor-alkali plants in Saskatchewan and Ontario respectively under valid licences from the authorities in those provinces. These plants discharged mercury into rivers that drained into Manitoba. The mercury was carried into Manitoba

waters where it contaminated fish, making them unsafe for human consumption and unmarketable, so that Manitoba authorities refused to permit commercial fishing. Commercial fishermen in Manitoba suffered loss of income as a result and were given compensation in the form of forgivable loans pursuant to section 2 of the *Fishermen's Assistance and Polluters' Liability Act*. This statute authorized the Manitoba government to make payments to fishermen who suffered financial loss as a result of the prohibition, and to be subrogated to the payee's right to sue any person responsible for pollution of the waters involved, and to recover any payments made to that person from the alleged polluter. The Act also purported to relax the common law requirements for proof of causation, and to abolish or modify a number of common law defences to a civil suit. It provided that the defendant's possession of a permit to discharge a contaminant in another province was not a legal excuse for contaminating Manitoba waters.

On the basis of this statute as well as negligence, nuisance, and trespass at common law, the Manitoba government sued the companies to recover assistance payments of approximately $2 million made to 1,590 fishermen and former fishermen.

Four of the seven Supreme Court judges who heard the case ruled that the provincial government could not legislate to impose liability for loss incurred within the province as a result of the discharge of a contaminant in another province.[6] The three dissenting judges ruled that the legislation was valid as an exercise of legislative jurisdiction over property within the province.[7] Chief Justice Laskin, who delivered the dissenting judgment ruled that provincial jurisdiction over property rights in the province's fisheries included the power to protect such rights against injury.

The only definite result of the IPCO case is to state that, in cases of interprovincial pollution, the receiving province does not have jurisdiction. The case leaves in doubt who does have jurisdiction to pass legislation providing for compensation with regard to interprovincial pollution, pollution of fisheries, and other cases that may have both a provincial and a federal aspect. The case contains a clear statement by all seven judges that the provincial government has authority to enact compensation legislation modifying civil liability over most pollution-related injuries within the province while *obiter*, this statement can probably be considered definitive.

In cases based on common law torts, the question of constitutionality is unlikely to arise. If common law provided an adequate method of obtaining compensation, constitutional questions would be marginal. As common law is supplemented, codified, or modified by legislated schemes, constitutional invalidity may be raised as a defence by the person alleged to be responsible for providing compensation.

The answer to the question of constitutional jurisdiction has important practical effects. On the one hand, the federal government has traditionally been reluctant to deal with the matter of compensation in cases where jurisdiction is unclear, and therefore has not provided for compensation in proposed recent legislation such as the *Transportation of Dangerous Goods Act*.[8] On the other hand, provincial legislation will require uniformity and reciprocity to avoid the creation of "pollution havens," which can only be achieved by interprovincial agreements. Otherwise, a province that licences a business involved in the discharge of pollutants will have little incentive to pass legislation for the benefit of the population of a neighbouring province. This will be especially true if the polluting industry is of great economic importance to the home province and the requirement to pay compensation might cause it to curtail its activities.

Modelling an Effective Compensation System

In designing a compensation system or evaluating the utility of existing schemes, it is useful to have a model against which specific schemes can be compared. Earlier discussions suggest two approaches to developing a model. The first is to evaluate suggested systems in terms of a hierarchy of goals such as those suggested above. The second approach is to evaluate such systems in terms of the extent to which they remedy defects in the existing system, such as those described above.

The first approach requires identifying and establishing priorities for the system's goals, objectives, or functions. Establishing priorities may involve both ranking and weighting goals. The success of the system will lie in the extent to which it meets the various goals. Using the goals suggested earlier, for example, a successful compensation system would be one that fulfills the two primary goals of full, timely compensation and deterrence of pollution with as little interference as possible with competing or incompatible goals such as general economic welfare and maintenance of the civil liberties of polluters. As suggested above, the priority accorded to the two primary goals and to other goals will have a profound effect on the kind of system considered desirable. If full and timely compensation for a wide variety of losses is the primary goal of the system and is given much greater weight than other goals such as deterrence, the success of the system will be measured by

the extent to which it ensures availability of funds to the victim. Assigning liability will be largely irrelevant as it does not matter who pays, provided that funds are available from government, individual operators, or groups of operators. If, however, deterrence is given great weight, the success of the system will depend also on the extent to which it accomplishes prevention of pollution incidents, cleanup, and restoration of the environment. Assignment of liability to specific sources, industry as a whole, or government becomes a key ingredient of the system.

A system that purports to rank the interest of the victim in compensation above economic welfare and microeconomic considerations might be considered successful if it imposes no fixed upper limit on liability and imposes no rigid exclusion of pure economic losses; but if it retains a mechanism for selectively identifying and shifting all or part of the liability for losses when imposing full liability on a single source, it would be unduly harsh. Principles could be developed for determining these issues. Such a system would be less successful in fulfilling its goals if it systematically excluded all losses of a certain character or over a specified limit regardless of the ability of the polluter to pay and the harshness of the result to victims of pollution.

The alternative approach is to evaluate systems in terms of how they remedy problems in the existing regime. Having identified a number of specific limitations in the existing tort and insurance systems, we can say that the success of a system lies in the extent to which it addresses those issues.

In evaluating remedial systems, it is useful to distinguish between their comprehensiveness, their specific effectiveness, and their general effectiveness. The first quality is based upon the question, Does the scheme deal with all the key issues inherent in the problem? The second quality is based upon a further question, Given that the legislation does address a specific key issue, does it effectively remedy that aspect of the problem which existed before the legislation was enacted? The final quality depends upon an affirmative answer to both these questions.

Comprehensiveness

Using the remedial model, a compensation system will be comprehensive if it addresses the following key issues: causation, basis of liability, cost, timeliness of compensation, availability of funds, scope of damages, measurement of damages, class actions, and limitation periods.

Causation — To effectively deal with the causation problem, a system would have to relieve the victim of pollution of the onerous burden of proving that his loss resulted from a specific act by a specific person. Whether this is done by eliminating the need to establish this nexus, shifting the burden to government, reversing the burden of proof, establishing rebuttable or irrebuttable presumptions, or introducing new methods of proof such as epidemiological and statistical surveys will depend upon the various goals of the system.

Basis of Liability — To be satisfactory, a compensation system will have to reduce a number of barriers that stand in the way of recovery of compensation even when causation is clear. These barriers include evidentiary questions such as those discussed under "causation" but also include a number of considerations involving the nature of the interest the plaintiff must show and his relationship to the defendant. These considerations include the need to place the plaintiff's case within one of the traditional "causes of action," the spectrum of bases for liability ranging from fault through reasonableness to strict liability, and the defences available to defendants. In general, a system that deals with these questions will shift the focus of eligibility for compensation from the culpability of the person alleged to be responsible to the rights, interests, and needs of the person harmed.

Cost — To some degree, cost will be a function of the extent to which the system deals with the other issues discussed, and cost cannot be isolated as an individual factor. The cost of the tort system arises from the adversarial and formal nature of the settlement and litigation process, the stringent proofs required and the resultant need for legal and other specialized expertise. In particular, the effect of a system on cost can be estimated from the extent to which it removes the decision from the court system and relieves the parties of the need to rely on lawyers and other experts to represent them to determine facts. From the viewpoint of general economic welfare, the question of cost will often involve a comparison of the cost of the present system with the cost and efficiency of establishing and maintaining an alternative bureaucracy.

Timeliness of Compensation — Like cost, timeliness will largely be a function of the aggregate effect of reforms to the other key issues identified. Progress in this area may result from procedural or substantive reforms, from reforms that result in an earlier hearing on the merits by reducing opportunities for delay, or from reforms that result in earlier favourable settlements by resolving many of the issues in the plaintiff's favour – for example, by abolishing defences or reversing burdens of proof. Delay may also be reduced by shifting initial and/or ultimate responsibility for payment from the defendant and his insurer to

some government agency or by removing the decision-making process from the courts to a special tribunal. The formality of the process, the methods of assessing damages, and the nature and number of appeals available from rulings of the decision-making body may also affect this area of concern.

Availability of Funds — This may be accomplished through a variety of strategies involving assurance that persons creating risks will maintain adequate insurance or provide other forms of security, and through government- or industry-administered funds.

Scope of Damages — A system will be judged by whether it expands or contracts the kinds of interests protected and damages recognized by the tort system. Indicators of this will include how the system treats questions of remoteness, directness, foreseeability, and duty of care, which are issues that bridge causation, basis of liability, and scope of damages. Whether the system places upper limits on amounts recoverable and how it treats inconvenience, pain and suffering, loss of use and enjoyment of property, mental anguish, aesthetic considerations, and pure economic losses will be directly relevant.

Measurement of Damages — The system's treatment of this issue can be judged by how it treats future damages and by the fairness and efficiency of the rules it develops for assessing damages. To be effective, the system should remove some of the uncertainties surrounding present damage assessments without unduly curtailing the scope or quantum.

Class Actions — An effective system would develop methods of making a single determination of facts, collection of evidence, and drawing of conclusions upon which large groups of victims could rely. This implies that such decisions would inure to the benefit of classes of people affected by pollution, but they or their representatives would have a collective opportunity to participate in or challenge any finding against their interests. The Japanese compensation law is interesting in this respect.

Limitation Periods — The system should ensure that claims are not barred in cases where environmental damage or health injury resulting from "creeping impairment" does not manifest itself for many years, without unduly prolonging the uncertainty and risk of the persons potentially liable. In this regard, one might consider whether a limitation period is established and, if so, whether it expands or contracts the traditional tort limitation period of six years and whether it establishes any mechanism for extending the time for making claims in situations where rigid limitation periods might have unduly harsh results for the claimant.

Specific Effectiveness and General Effectiveness

A scheme may be specifically effective without being generally effective. Conversely, for want of specific effectiveness, a particular approach may be comprehensive without being generally effective. A scheme may deal with each of the key issues, but may not deal with them effectively. For example, if a system reduces all the barriers to recovery, but with respect to one of the barriers – for example, cost – reduces the cost only sufficiently to allow middle income class victims to pursue their remedies but not lower income class victims, it is comprehensive, will be specifically effective with respect to some aspects of the problem but no others, and therefore will not be generally effective.

If a scheme effectively removes the need for the victim to establish causation without providing any method of establishing availability of funds, the victim may be denied adequate compensation. The system would be specifically effective without being comprehensive or generally effective. It may be a reform that remains largely impotent for want of a comprehensive or generally effective approach.

By examining the written framework of each scheme and statements made by its proponents about its intended effect, some general observations may be made concerning the potential specific effectiveness of a particular approach. However, specific effectiveness is often only determined after a detailed analysis of the case-by-case application of a particular scheme over a number of years. Such a detailed empirical analysis is beyond the scope of this paper. Furthermore, in many instances, it would be impossible since a number of these schemes have been created very recently and some have not even been put into operation. Consequently, our comparative analysis will focus primarily on the first quality – the comprehensiveness of alternative legislation schemes. By adopting this approach, some measure of general effectiveness will also be established since it is partially a function of comprehensiveness.

Canadian Federal and Provincial Legislation

We turn now to a consideration of some of the Canadian federal and provincial legislation that has been enacted to deal with the specific problem of compensation for pollution victims. It is apparent that much of the Canadian legislation is highly specialized. The enactments tend to address specific and narrow situations and there is no comprehensive approach to

these problems. To some extent, this lack of comprehensive legislation may be attributed to the constitutional division of powers between the federal and provincial governments. Furthermore, it could be argued that specialized legislation may be necessary since individual pollution events and/or substances are perhaps most effectively dealt with by means of individual, specialized approaches. For example, it is arguable that pollution caused by radioactive substances can be more effectively dealt with under a specialized enactment than under legislation dealing with many polluting substances. Radioactive substances and pollution have particular characteristics unrelated to many other forms of air and water pollution; for example, their capacity to cause genetic damage, the extremely long half-life of radioactive isotopes, and the long delay between exposure and the manifestation of disease symptoms. These characteristics may suggest the need for longer limitation periods or stricter liability rules to create a greater incentive to avoid accidents. Public policy considerations such as a perceived need for nuclear energy for medical or military purposes or to avert energy shortages may also suggest special treatment of this form of pollution risk. For example, government may choose, as the U.S. and Canadian governments have, to underwrite insurance not available from private insurers; whereas, in the absence of such policy considerations in similar circumstances, users of other pollutants might be denied a licence to operate unless they provide proof of sufficient insurance to cover foreseeable claims. Therefore, legislation dealing solely with pollution from radiation appears to be a logical approach. However, this may merely be an argument for exceptions to general rules rather than for a fragmented approach to compensation. While differences in technology may suggest a variety of individualized approaches to regulating use of pollutants, handling, inspections, prevention, and cleanup, it is suggested that these differences do not necessarily justify a similar degree of difference in approach to providing compensation.

As the common law obstacles to compensation exist in relation to *pollution*, not solely in relation to specific pollutants, this suggests to the author that the relevant subject matter for reform legislation should be pollutants and pollution generally, rather than specific pollutants. Legislation should be comprehensive not only in terms of removing these obstacles, but also in terms of subject matter. If a specific enactment comprehensively removes the common law obstacles in relation to only one pollution substance or only one class of victims or a single type of pollution event, it offers no assistance to victims who do not fall within its narrow confines. If each of these specialized laws were individually comprehensive and collectively they produced a legislative scheme touching upon all aspects of pollution and compensation, the legislative approach would be broadly remedial, if cumbersome and unconsolidated. However, the sum of the existing narrow enactments does not equal a comprehensive program. Victims of pollution often find that, in light of the common law obstacles, their need for compensation remains unanswered in the present fragmented legislative scheme. The Japanese compensation law offers an interesting contrast to Canadian legislation. By enacting a single law for compensation in general, the Japanese legislation offers a scheme that strives to be comprehensive both in terms of our common law barriers and in terms of establishing a relevant subject matter. There is certainly no evidence that the attempt to meet the goals set out towards the beginning of this paper suffers from its more general approach.

Furthermore, even if one were to accept that narrow focus is essential for constitutional and technical reasons, the enactments are not comprehensive even in relation to their own specific subject matter.

The Nuclear Liability Act

Passed in 1970 and proclaimed in force in 1976, the *Nuclear Liability Act*[9] is an example of highly specialized remedial legislation. Its subject matter is confined to pollution from nuclear materials located at nuclear installations or in transit. As of March 24, 1980, there has not been a claim under the Act.[10]

The Act is designed to provide compensation for personal injury and property damage caused by nuclear accidents. Under section 3, the operator of a nuclear facility has a duty to prevent injury to health or property from nuclear material at his installation or in transit to or from his installation. The Act addresses the issues identified as in need of reform in the following manner:

Basis of Liability — The Act imposes absolute liability upon the operator to compensate for a breach of the duty to prevent injury to health or property, subject to specific exceptions for which he has no liability. Consequently, the operator will be liable for personal and property damages occasioned by nuclear material at his installation or in transit and this liability arises without proof of fault or negligence, subject to the following exceptions.

- The operator is not liable for damages to the nuclear facility itself, to other property used in connection with the nuclear installation, or for any

property damage to the means of transportation and storage facilities incidental to this transportation.

- No liability is imposed if the "nuclear incident" is a direct result of an act of armed conflict.

- The operator is not liable for injury or damage suffered by any person if the "nuclear incident" occurred wholly or partly as a result of an unlawful act or omission on the part of that person.

Limitation Periods — The Act extends the six-year common law limitation period, but because some radiation illnesses may take longer to become manifest than the statutory limitation period, this extension may be inadequate.[11] A claim for injury other than loss of life or damage to property must be brought within three years from the earliest date that the person had knowledge or ought to have had knowledge of the injury or damage, but in no instance can an action be brought more than ten years after the cause of action arose. Thus, the limitation period is generally shorter than the common law six-year period, but in cases where injury does not manifest itself within six years, it may be longer. By basing the limitation period on imputed knowledge and not actual knowledge, and by perpetuating the traditional confusion over when a "cause of action" arises, the Act potentially continues to create the limitations problems which provided obstacles to successful action for pollution damage at common law.

Cost — Although the liability provisions might encourage a more expeditious settlement of claims, the victim must still rely upon the judicial system to obtain compensation. Thus, there are no provisions aimed directly at reducing the cost of obtaining compensation by establishing an administrative decision-making forum for most claims. However, where the aggregate of claims exceed $75 million or where the federal cabinet feels it would be in the public interest to provide special measures for compensation, it may establish a Nuclear Claims Commission. Consequently, some administrative alternative to the judicial system is provided for in the case of large compensation claims or widespread damage. The Commission appears to have extraordinary powers to exercise discretion in determining the amount of compensation to be awarded to claimants, is not bound by the normal rules of evidence, and appears to be subject to no appeal procedure and very limited judicial review.

Availability of Compensation Funds — The operator of a nuclear installation must carry both "basic" and "supplementary" insurance with a combined total of $75 million. The amount of basic insurance required by a particular operator will be set by the federal Atomic Energy Control Board for each nuclear installation in accordancce with its size and type of operations. Basic insurance is provided by the insurance industry up to a maximum ceiling of $30 million. Supplementary insurance is the difference between the amount of basic insurance and $75 million, and is reinsured by the federal government. Consequently, a $75 million fund will be available through a combination of private insurance and government reinsurance. This fund does not ensure full compensation, however, as estimates of damage from a major incident run as high as $14 billion.[12]

Nor does the establishment of a Nuclear Damage Claims Commission to assess compensation and pay claims necessarily imply that compensation will be available in excess of $75 million. The purpose of the Commission appears to be to prorate or otherwise distribute the existing fund. The Act specifically provides that no payment in excess of $75 million is to be made without an Act of Parliament.

The Act therefore makes some provision for availability of funds, but does so inadequately. The initial ceiling of $75 million has been criticized as being too low. Similar legislation in the United States empowers the Nuclear Regulatory Commission to indemnify operators against their liabilities for injury or damages, in excess of the insurance carried, up to $560 million.[13]

Causation — It is not clear whether the legislation will accomplish any significant reform with regard to this common law barrier. Section 6 of the Act provides that personal injury or property damage that is not directly attributable to the operator's breach of duty, may be deemed attributable to the breach if it cannot be reasonably separated from injury or damage that is attributable to the breach of duty. In the absence of litigation, it is impossible to ascertain precisely the effect of section 6, but it may open the door to "indirect" or "remote" damage that would otherwise be barred. The requirement that damage be "attributable to" the breach of duty rather than "caused by" it, may lead the court to relax traditional causation requirements and equate attribution with simple proof of contribution rather than direct causation. However, the legislation does not clearly relieve victims from the requirement to prove traditional causation, at least before the courts. The Act gives no guidance as to how a Commission, which appears to have the power to dispense with this requirement, might treat causation.

Scope and Measurement of Damages — Damage is defined as "any loss of or damage to property, whether real or personal or movable or immovable and . . . includes any damages arising out of or attributable to any loss of or damage to property." Injury means personal injury and includes loss of life.

According to one AECB official, these definitions may cover economic injury and consequential damage to one's family and nervous shock.[14] However, the Act does not specifically authorize any damages not normally within the scope of common law damages and authorizes the federal cabinet to exclude any kind of injury or damage from the damages a Commission may award. Nothing is said about the measurement of damages. In the absence of litigation, it is not clear that the Act will accomplish any reform in this area.

Timeliness of Compensation — In general, the victim of a nuclear accident must prove his damages in the civil courts or negotiate a settlement before any relief is available. However, the Act authorizes the cabinet to make regulations providing for payment of interim financial assistance by the government to alleviate hardship or suffering.

In conclusion, the subject matter of the *Nuclear Liability Act* is narrow. Although it significantly changes the traditional basis of liability to the benefit of the claimant, its provisions with regard to the availability of compensation funds, limitation periods, and the cost and timing of securing compensation are of limited application. It is not clear that the Act accomplishes even limited reform with regard to causation and the scope of damages, nor does it provide for collective legal action. The Act therefore cannot be described as comprehensive, and it cannot be predicted with any certainty that it will be specifically effective or generally effective even within its limited scope of application.

The Pesticide Residue Compensation Act

The *Pesticide Residue Compensation Act*[15] is another example of extremely specialized compensation legislation. To establish a right to compensation – that is, with respect to the issues of basis of liability and causation – the individual must establish that:

- he is a "farmer," defined as "producer of primary agricultural products for sale";
- his products are so contaminated that their sale would be contrary to the federal *Food and Drugs Act*;
- the contamination was caused by a pesticide registered under the federal *Pest Control Products Act* and used in accordance with recommended practices;
- the presence of the residue is not attributable to the fault of the farmer, his employee or agent, or the previous owner of the farm, his employee or agent;
- he has taken steps to mitigate losses and to initiate any legal action available to him, such as suing the manufacturer of the pesticide or the person responsible for the pesticide's presence on his land or in his livestock's feed; and,
- as a condition of compensation he will give any consent required by the Minister of Agriculture so that the government may pursue a legal action on his behalf.

A claimant must fulfill all these criteria and take all these steps before he may receive compensation. Since the farmer is required to pursue all alternative legal remedies before he can apply for compensation, this is an Act of last resort. If there is an identifiable responsible party, the individual is faced with all the common law obstacles to compensation before the provisions of the Act come into play. The Act is useful primarily in cases where the source of the contamination cannot be identified.

If an individual qualifies for compensation, he may receive an amount that is not to exceed 80 per cent of the market value of the particular commodity in the particular season. Therefore, the scope of damages is quite limited. No compensation is available for loss of the land or future crop losses that might result from contamination of the soil.

Since jurisdiction to award compensation rests with the Minister, the costs of obtaining compensation under the Act do not appear to represent a specific obstacle once the applicant has pursued the alternative remedies that create the cost barrier. The individual may appeal the Minister's decision to an assessor appointed from among the judges of the federal or provincial superior courts. The assessor has authority to confirm, vary, or refer the original decision back to the Minister. The assessor's decision is final and is not open to appeal or judicial review.

Given the narrow application of this Act and the fact that the government provides the funding, it appears that the Act most effectively addresses the problem of availability of compensation funds. However, because the Act appears to require traditional civil action based on tort remedies as a prerequisite to access to the fund, it cannot be described as comprehensive. As an indication of its specific effectiveness, in the first twelve years after its passage in 1968, only two claims were made under the Act. One of them resulted in an award of approximately $30,000. The other claim was rejected because the claimant had failed to use the product in accordancce with the directions on the label.[16]

The Canada Shipping Act, Part XX

Under Part XX of the *Canada Shipping Act*,[17] provision is made for unlimited compensation provided through a government-administered fund into which shipowners are required by law to make

payments where pollution damage is caused by ships carrying "pollutants in bulk." Regulations define ships carrying a "pollutant in bulk" as ships carrying at least 1,000 tons of oil as fuel or cargo. Only oil is identified as a "pollutant in bulk." While the 1,000-ton minimum would apply to most ocean-going ships and Great Lakes oil carriers, it would not apply to the majority of Great Lakes merchant vessels.

The owner of each ship carrying bulk oil must pay a levy of fifteen cents per ton of oil imported into or shipped as cargo from any point in Canada into a Maritime Pollution Claims Fund.

Like the *Nuclear Liability Act* and *Pesticide Residue Compensation Act*, Part XX of the *Canada Shipping Act* is highly specialized legislation that covers a narrow subject matter. Like the *Pesticide Residue Compensation Act*, this legislation remains virtually unutilized. Although collection of levies from early 1972 to 1 September 1976 (when contributions were halted by an order of council) amounted to approximately $53 million by March 1979, the Fund had been used in only two instances and has paid out approximately $600 in compensation, as of January 1980.[18]

Within the narrow scope of the Act, does it remove the obstacles to compensation identified in this paper? The provisions appear to deal effectively with causation, basis of liability, and availability of funds, but less effectively with other barriers.

Cost and Timeliness — The Act requires the victim to obtain judgment in Admiralty Court (for the purposes of this Act, the Federal Court of Canada) and to attempt to enforce the judgment against the shipowner or other person liable at law before seeking relief from the Fund. The Act provides for an Administrator of the Fund to be appointed by the federal cabinet to settle claims against the Fund. The Administrator must be served with notice of civil actions against the shipowner. He becomes a party to the proceedings and "stands behind the defendant shipowner as a subsidiary defendant, a guarantor, or an unsatisfied judgment fund."[19] The Administrator must pay the claimant any part of the damages awarded by the court that he cannot recover from the defendant, provided that the plaintiff can satisfy the Administrator that he has made all reasonable efforts to collect. Moreover, the Administrator may not make payments until the time for all appeals to higher courts has expired.

The injured party can apply directly to the Fund without legal action in only two instances. Where the responsible shipowner cannot be identified, the injured person may seek relief directly from the Fund; however, even in this situation, the Admiralty Court must be satisfied that all reasonable efforts have been made to identify the ship. Fishermen who suffer a loss of fishing income also can apply directly to the Fund. Appeal procedures from the decision of the Administrator are available.

Causation — The Act provides some remedial action. In a civil court action against a specific polluter, the victim is still required to establish that his loss resulted from the discharge of the defendant's pollutant. However, the victim may name the Fund as a defendant in a civil action if he is not able to identify the ship that caused his specific damages. Consequently, a remedy is available even when the victim cannot identify the specific source of the pollutant. However, if the victim can identify the source, he must still prove causation.

Basis of Liability — The owner of a vessel that carries a pollutant in bulk is liable for all actual loss or damage to the Crown or to third parties that results from the discharge of the pollutant and also for remedial costs of cleanup and damage reduction measures authorized by the federal cabinet. The person suffering loss or damage is not required to prove fault or negligence. The shipowner is presumed liable unless he establishes that the damages were wholly caused by:

- an act of war, hostility, or natural phenomena;
- an act or omission of another person with intention to cause damage; or
- the negligence or wrongful act or omission of any person or government in the installation or maintenance of navigational aids.

If the defendant can establish that the undischarged pollutant would not contravene regulations made pursuant to section 728 (1) of the Act, if it were discharged, the Minister of Transport has the authority to exempt the defendant from liability.

Consequently, although the Act provides the shipowner with a number of defences, the victim is not required to establish negligence or fault to maintain his claim for compensation.

The liability of the shipowner is unlimited if the incident occurs as a result of his fault or privity. However, if the incident occurs without his fault or privity the shipowner's liability is confined to the lesser of 210 million gold francs (about $16.8 million in 1977 dollars) or 2,000 gold francs (about $160 in 1977 dollars) per ton of the responsible ship's tonnage. In this no-fault situation, any claims in excess of this maximum would be paid by the Maritime Pollution Claims Fund.

Scope of Damages — The shipowner is liable for *actual* loss or damage to the Crown or to third

parties. The class of third party claimants is restricted to fishermen, waterfront property owners, and boat owners. Only fishermen may claim for future economic loss. With regard to fishing income, Part XX is a significant advancement over common law, as some cases denied fishermen standing to sue and ruled that lost fishing income was uncompensable. However, if a community were economically damaged by a loss of fishermen's income or by the destruction of tourist beaches or bad publicity associated with an oil spill, individual residents and businesses may not be eligible to claim compensation for loss of income.

Limitation Periods — The provisions of Part XX contract the traditional limitation period to two years. Since delayed reaction illnesses are not likely to result from oil spills, this probably will not create difficulty for most plaintiffs.

The provisions remove significant common law barriers with regard to the need to prove causation when a source of contamination cannot be identified, the basis of liability, and availability of funds. The provisions clearly establish availability of funds sufficient to cover losses caused by all but the most disastrous accidents. It is interesting to speculate, therefore, why greater use has not been made of the provisions. The scope of interests recognized and damages considered compensable may still be too narrow; Canada may merely have been fortunate in avoiding major spills in sensitive locations in recent years; the provisions may have provided a substantial deterrent to spills; the defences available to the shipowner may be too broad; or it may be that serious oil spills are so rare that a Fund of the size established under this legislation is unnecessary. One transport Canada official has suggested that the Fund was established in the midst of "political hysteria" over the Torrey Canyon and Santa Barbara oil spills of the late 1960s.[20] The Administrator of the Fund testified in 1977 before the West Coast Oil Ports Inquiry that his "anxieties" about the Fund "do not relate to the compensation of the victims of oil discharges by ships in Canada, rather, to my own ability to obtain reimbursement for the Fund after paying the victims in Canada and being subrogated in their rights or to prevent payments from the Fund in circumstances not intended by Parliament."[21] He did not elaborate upon what the "circumstances not intended by Parliament" might be, but stated that the difficulty of enforcing the subrogated right of the Fund to recover payments arises from the registration of ships under flags of convenience, so that it is difficult to ascertain what assets the shipping companies have or to realize upon their assets. Despite the sanguine attitude of the Administrator, several potential claims remained unrecovered between 1976 and 1978 while the persons suffering the losses pursued their remedies through the courts.[22]

The 1977 Amendments to the Fisheries Act

The 1977 amendments[23] to Canada's *Fisheries Act*[24] contain the combination frequently found together in statutes regulating sources of pollutants of a duty to report pollution incidents, an obligation to take remedial action, and an obligation to compensate for loss or damage. The amendments require cleanup of spills of "deleterious substances" and take preventive action against a serious and imminent danger of a spill. The cargo owner or the carrier must notify officials of the Department of the Environment of any spill, where required by regulations, and must comply with any orders issued by the Department. Both the owner and the carrier have a duty to do all they can to prevent or mitigate any spill. Licenced commercial fishermen may also receive compensation under the amendments for spills (from sources other than ships, whose liability is covered by Part XX of the *Canada Shipping Act*, described above) that interfere with their livelihood. The amendments attempt to come to grips with special problems experienced by fishermen in obtaining compensation at common law as a result of cases mentioned above, which ruled that fishermen have no property rights in fish they have not caught and that loss of income is consequential rather than direct damage. In effect, then, the amendments give these fishermen standing to sue for what had previously been considered a public nuisance. How effective the amendments are remains to be seen. Because the amendments require private enforcement through the tort system, the only public record of claims or awards would be judicial decisions reported in the law reports. As of December 1980, there have been no reported cases.

Section 33 (10) imposes civil liability for depositing or permitting the deposit of a deleterious substance in water frequented by fish. Previously, civil liability could attach only to a person who could be convicted of the quasi-criminal offence of causing or permitting the deposit. The expanded section 33 makes the owner of a pollutant, any person in charge of it, and anyone who caused or contributed to the deposit of the deleterious substance in water frequented by fish liable to reimburse the federal or provincial government for any reasonable costs and expenses either of them might reasonably incur in taking any measures that they consider necessary to prevent the deposit of the contaminant or the harmful condition resulting

from the deposit of the contaminant, or to counteract, mitigate, or remedy the adverse results that might be anticipated.

The owner, person in control, and anyone who caused or contributed to the pollution are also jointly and severally liable to compensate licenced commercial fishermen for any loss of income incurred either as a result of the deposit or as a result of a government agency prohibiting fishing because of the pollution. The amendments do not make those responsible for the pollution liable to reimburse anyone other than the government agencies for expenditures incurred to prevent contamination or to counteract, mitigate, or remedy adverse effects. Therefore, fishermen, riparian owners, and others who may want to take remedial measures must either rely on government agencies to do so, or fall back on civil action to recover any voluntary outlays.

The liability of the owner of the deleterious substance and the person in charge of it at the time that it is deposited in the water is absolute and does not depend on proof of fault or negligence. Both are jointly and severally liable unless they can establish that the pollution was wholly caused by an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable, and irresistible character, or by an act or omission with intent to cause damage by a person other than an employee. Any other person who contributed to the deposit or the danger associated with it is also liable to the extent of his negligence to reimburse the Crown for preventive or remedial expenses and to compensate licenced commercial fishermen for loss of income. Persons who are liable retain their common law rights to seek contribution or indemnification from any other party who might share legal responsibility. The fact that a discharge might be exempted from the *Fisheries Act* with respect to prosecution does not remove any right one might have to a civil remedy for harm resulting from it. However, the common law limitation period of six years is severely curtailed. No proceedings may be commenced to recover preventive or remedial costs or loss of fishermen's income later than two years after the occurrence could reasonably be expected to have become known to the plaintiff.

The amendments, therefore, address four of the issues involved in assessing comprehensiveness. The legislation addresses the issue of basis of liability by establishing that liability for compensation for loss of income and government preventive and remedial costs (but not private preventive and remedial costs) is absolute and not dependent on negligence or fault. It also limits the defences available to those involving causation resulting from factors that in most cases would be wholly beyond the control of the person owning or controlling the pollutant. The amendments specifically remove the potential defence that the fishermen's loss of income resulted from a government prohibition on fishing rather than from the contamination of the fish. By removing many such defences, the amendments also reduce the potential cost and delay involved in litigation and promote expeditious settlement. However, they retain the use of the courts as the decision-making forum and the framework of an uneven struggle between the victim and the polluter.

The Act does not reduce the onerous requirement to prove causation. Fishermen are entitled to compensation for loss of income "to the extent that such loss can be established to have been incurred as a result of the deposit." However, intervening causes may not be a bar to recovery. For example, a government prohibition of fishing does not bar recovery, "Acts of God" as defence are restricted to those of "an exceptional, inevitable, and irresistible character"; and a number of other potential intervening causes provide defences only if they are the sole cause of the loss of income.

While there is no limitation on the amount of damages recoverable, the scope of damages is restricted to loss of income. For property damage, the plaintiff must rely on his traditional common law remedies, which are not affected by the barriers to recovery of lost income. For example, liability to compensate fishermen for damage to their fishing gear as a result of a discharge of oil from a ship has been established on the basis of a breach of the statutory duty imposed by section 33 of the *Fisheries Act*.[25]

Finally, the amendments disallow any civil action more than two years after the time when the *occurrence* to which the proceedings relate could reasonably be expected to have become known to the plaintiff, rather than after the usual six years from the accrual of the cause of action. The crucial question in interpreting this limitation period is whether the "occurrence" refers to the construction of a facility that later results in the deposit of a deleterious substance, the deposit itself, or the manifestation of the loss. If this refers to the manifestation of the loss, the loss could occur either when the fisherman would have expected to land a catch, when he would have expected to deliver his catch to a purchaser, or when he would have had reasonable expectations of receiving payment from the purchaser. Presumably, the latter would be the most likely interpretation. Fortunately, the delay between the time when a defendant engages in an activity that causes harm and when the harm manifests itself, which is often encountered in personal injury cases, is unlikely to

occur with regard to loss of income. However, in some cases – for example, where there is a fixed fishing season – there may be up to a year's delay between the deposit of a deleterious substance and the loss of income. Moreover, where a deleterious substance gradually accumulates in the flesh of fish rendering them unmarketable only after a number of years, this may or may not be a continuing cause of action, which effectively extends the limitation period. Whether this ambiguity results in any diminution of the availability of compensation to fishermen will depend upon the circumstances of each case. The result will depend upon whether Canadian courts follow *Cartledge v. Jopling*[26] in holding that the first actual occurrence of damage marks the beginning of the limitation period, whether or not the plaintiff is aware of the existence of the damage, or upon whether they follow the dicta that, where a right of action and a limitation period, are contained in the same statute, the cause of action does not accrue and time does not begin to run until the plaintiff knows or ought to know that he has suffered injury. In other words, the result will depend upon whether the courts interpret the occurrence that "could reasonably be expected to have become known" to the plaintiff as the act causing the loss or actual loss itself.

The Arctic Waters Pollution Prevention Act

The *Arctic Waters Pollution Prevention Act*,[27] passed in 1970 by the federal government, prohibits the deposit of waste of any type other than wastes authorized by regulation in Arctic waters or in any place on the Arctic mainland or islands in a manner that the waste will enter Arctic waters. The Act requires any person who has deposited waste or carries on an undertaking that is in danger of causing a deposit of waste in Arctic waters to report the deposit of waste or the accident or other occurrence causing the danger of the waste entering Arctic waters forthwith to one of the pollution prevention officers appointed under the Act. This also applies to the master of a ship that has deposited waste or that is in distress and for that reason is in danger of causing a deposit of waste.

To regulate the deposit of such waste, the Act gives the federal cabinet the power to designate areas of the Arctic as shipping safety control zones, to regulate navigation in those zones, and to destroy or remove any ship in distress, sunk, or abandoned that is depositing waste or likely to deposit waste, and to sell the ship and its cargo and apply the proceeds towards meeting the government's expenses. The federal cabinet may also require any person who proposes to construct, alter, or extend any work or works that may result in the deposit of waste to provide the government with a copy of its plans and specifications.

If, after reviewing the plans and specifications, the cabinet is of the opinion that the construction or operation of the undertaking will result in a deposit of waste contrary to the Act, it may require the proponent to modify the plans or specifications or may prohibit the carrying out of the work.

Depositing of waste, failing to report such deposits or accidents that might result in a deposit of waste, failing to provide plans and specifications requested, constructing, altering or expanding work without cabinet approval, and navigating a ship in a shipping safety control zone in contravention of regulations are offences punishable by fines ranging from a maximum of $5,000 in the case of an individual to $100,000 payable by owners of ships under certain circumstances.

The Act also imposes civil liability resulting from the deposit of waste. Persons engaging in exploiting natural resources in the Arctic or carrying on an undertaking, as well as the owners of ships and their cargos are liable to reimburse the government for any steps it takes to reduce or mitigate damage to or destruction of life and property that may reasonably be expected from the deposit or anticipated deposit of wastes and to reimburse any other person for all actual loss or damage resulting from a deposit of waste. Owners of ships and the owners of their cargo are jointly and severally liable and in some cases their insurers are also directly liable. The liability of each of these persons is absolute, except for insurers, who have a number of statutory defences established by regulation. The regulations also set out a number of limitations on liability.

Where a prohibited deposit of waste has occurred or is imminent, the federal cabinet may order any action to repair or remedy any condition that results or to reduce or to mitigate any damage or destruction that may reasonably be expected. The Act empowers the government to recover all costs and expenses incurred for this purpose from each of the persons considered liable through civil suit, up to the maximum amount established by regulation. Any other person who suffers any actual loss or damage resulting from an illegal deposit of waste and caused by or *otherwise attributable* to the activity, undertaking, or ship, as the case may be, also may sue for compensation. The Act gives private loss and injury priority over government cleanup costs and expenses in any such court action. The liability for cleanup costs and compensation is absolute and does not depend upon proof of fault or negligence. However, if

more than one person's conduct contributed to the deposit of waste, the court may apportion the liability among those responsible. As between the person carrying on the activity that results in the injury or loss and the innocent victim, however, there appear to be no defences.

The Act authorizes the federal cabinet to make regulations requiring any person who explores for, develops, or exploits any natural resource in the Arctic, who carries on any undertaking, or who proposes to construct, alter, or extend any work, and the owners of any ship and its cargo to provide evidence of financial responsibility in the form of insurance, an indemnity bond satisfactory to the cabinet, or in any other form required. The insurance or indemnity bond must be in a form that will enable persons entitled to recover cleanup costs or compensation for loss or damage to claim directly against the insurance company or bonding company to recover directly from the proceeds of the insurance or bond.

The cabinet may make regulations limiting liability. Regulations have been made establishing formulae for calculating the amount of liability of operators according to the volume of waste produced, substance stored, and number of oil or gas wells drilled.[28] The maximum liability of oil and gas companies drilling in the Beaufort Sea is limited to $40 million, with liability for drilling in Arctic waters other than the Beaufort Sea limited to $50 million, while the liability of shipowners and the owners of cargo is limited to 210 million gold francs.

Regulations have been made describing the evidence of financial responsibility required from shipowners.[29] A ship carrying less than 2,000 tons of waste need file no evidence of financial responsibility. However, the owners of other ships and the owners of their cargo are jointly responsible for filing a declaration stating that the ship is insured by an underwriter with a special policy endorsement for Arctic waters providing that the shipowner will maintain the policy as long as the ship operates in Arctic waters and that the policy may only be cancelled by the underwriter after 30 days' notice to the federal Minister of Transportation. Unlike other persons, the insurer or bonding company is permitted to state in the special policy endorsement that, in the case of a direct claim against him, the underwriter may invoke any defence that would be or would have been available to the shipowner and, in particular, that he has no liability where:

- the deposit of waste was caused by an act of war, hostilities, civil war, or insurrection, or a natural phenomenon of an exceptional, inevitable, and irresistible nature;
- the deposit of waste was wholly caused by an act or omission of a person, other than the shipowner or a servant or agent of the shipowner, done with intent to cause damage;
- the deposit of waste was wholly caused by the negligence or wrongful act of a government or other authority responsible for the maintenance of navigation lights or other aids to navigation in the exercise of that responsibility; or
- the deposit of waste was caused by wilful misconduct on the part of the shipowner.

The liability of the insurer or bonder is limited to the same maximum amount as that of the shipowner and owners of cargo.

The regulations allow the owner or underwriter of a ship to reduce its maximum limits of liability by an amount equal to the costs and expenses that it reasonably incurs in taking action to repair or remedy damage or reduce or mitigate damage to or destruction of life or property. It appears that the owner or underwriter may, for example, apply the costs of cleanup against liability for third party damages, as the regulations do not clearly state otherwise. Thus, if the owner or underwriter incurred reasonable costs in cleaning up a spill to the maximum amount of its legal liability, it would appear to have no liability to provide further compensation for any third party losses. The Act provides that, in any civil suit, persons suffering loss or damage have a prior right to any monies recovered in a legal action over payments to the government for any cleanup costs; however, if owners of ships and their cargo or their underwriters voluntarily accept costs, there appears to be no mechanism to determine how these expenses will be allocated among various kinds of costs to a variety of persons that might result from deposit of waste.

No proceedings to recover cleanup costs or compensation may be commenced more than two years from the time when the deposit first occurred or could reasonably have been expected to have become known to those affected by it.

The *Arctic Waters Pollution Prevention Act* addresses many of the requirements for a comprehensive regime. Liability is almost absolute. The causation requirements are somewhat relaxed insofar as loss or damage attributable to an activity or undertaking but not solely caused by it is covered. The Act does not narrow the scope of damages available at common law, and is silent on whether it widens them. It merely states that "all actual loss or damage incurred" is compensable, so that the courts may apply traditional common law limitations on the

scope of damages considered compensable or may interpret the provision literally and widen the scope. The Act takes steps to ensure availability of funds by providing for joint and several liability of a number of different potential sources of pollution, by requiring evidence of financial responsibility, and, unlike most statutes, by providing that funds secured by insurance or bonds are available for compensation of damages and providing for direct action against the insurer or bonder to recover the proceeds.

To the extent that the Act leaves the courtroom as the primary forum for dispute settlement, it does not alleviate problems of time and cost. Limiting liability without providing any supplementary fund out of which losses in excess of the maximum liability may be recovered also falls short of the goal that a compensation system should provide the possibility of full recovery. The limitation period fails to meet the requirements for effectiveness; it begins to run from the time of the deposit rather than the time of harm; it reduces the common law limitation period; and it utilizes a "reasonable person" test, which imposes a substantial burden upon the plaintiff. Moreover, in the special circumstances of the Arctic, remoteness may impose difficulties upon discovery of a deposit or of harm. This should also be taken into account in establishing the limitation period.

Ontario's Board of Negotiation – Ontario

The investigation and negotiation procedure established under *Ontario's Air Pollution Control Act*[30] in 1967, and later incorporated into the more comprehensive *Environmental Protection Act*[31] when it was passed in 1971, is of interest here. This procedure was possibly the first attempt made in Canada to deal with pollution compensation outside the common law framework, and it may be the only Canadian example of a voluntary approach to compensation through a form of mediation. After approximately eleven years of operation, however, evidence that it is an effective method of providing compensation is limited and inconclusive. Relatively few cases have been handled. No record is kept of amounts of settlements and no efforts have been made to determine whether legal actions have been commenced in cases where no settlement was reached, or whether such claims have been abandoned. What information is available about claims and settlements indicates that both are usually small. Little information is available because hearings are held *in camera* and the names of parties are not released. No independent study of the process has even been made.

The procedure is twofold. It consists of an investigation by biologists in a branch of the Ministry of the Environment to determine the cause of the injury, and a hearing by a Board of Negotiation. Any person who believes that a contaminant is causing or has caused injury to livestock or to crops, trees, or other vegetation, which may result in economic loss, may, within 14 days after the damage becomes apparent, request the Minister of the Environment to conduct an investigation. Upon receiving such a request, the Minister may order an investigation. If he does so, he must send a copy of the report of the findings to the complainant and to the person responsible for the source of the contaminant. Subsequently, the complainant may request that his claim for damages be negotiated by the Board of Negotiation by notifying the Minister and the operator or owner of the source of the contaminant alleged to be the cause of the harm of his desire for a hearing and of the amount of his claim, within a reasonable time after the amount can be determined. If the claimant and the person alleged responsible for the contamination cannot agree upon compensation within 30 days after this notice, either party may request that the Board negotiate a settlement. The parties cannot be compelled to attend and the Board's recommendations are not binding upon them. Furthermore, any evidence presented at the hearings and the Board's recommendations are "without prejudice" and would not be admissable in any subsequent proceedings. Thus, the claimant cannot use these hearings as "discoveries" for future tort proceedings. The Act directs the Board to proceed in a "summary and informal manner" to negotiate a settlement of the claim.

If the parties are unable to reach a settlement, they retain their common law remedies. Although the fact of a hearing and its recommendations may not be used in subsequent civil proceedings, there is nothing in the act to prevent the complainant from subpoenaing the Environment Ministry official who prepared the report. According to Ministry officials, no one has ever been subpoenaed.[32] This would lead to the conclusion that these hearings have led either to settlements or abandonment of the complainant's claim, rather than to litigation in cases where complainants may not have been satisfied with the Board's recommendation.

The investigation is carried out by the Phytotoxicology Section of the Ministry. The purpose of this investigation is to determine whether a causal connection exists between the alleged source of the contaminant and the damage suffered by the complainant. Environmental contamination is involved in approximately 50 per cent of complaints received.[33]

In other cases, damage is found to result from natural causes such as disease and insects. The investigation sometimes concludes that damage has resulted from a combination of contamination and natural causes.[34]

If the Phytotoxicology Section finds that the damage has been caused by a contaminant and is able to identify the person responsible for the contamination, the Act provides that it must give a copy of the report both to the claimant and to the person responsible. In practice, the Section will also send copies of its report to the Board of Negotiation and to the regional Industrial Abatement Section of the Ministry of the Environment. The report will provide a basis for negotiations between the claimant and the person responsible for the contamination and further inspection by the Industrial Abatement Section, which has authority to require the offending person to abate the source of contamination. Ministry officials report that if abatement takes place, many complainants do not invoke the negotiation procedures.[35]

To encourage the parties to negotiate their own settlement, the Act does not permit either party to have access to the Board of Negotiation until 30 days after the notice of claim is given to the Minister. The Act proves that a hearing is available only if the claimant and the person responsible are not able to settle the claim in this 30-day period.

If these private settlement negotiations have been unsuccessful (or presumably if no attempt has been made to settle), the Board will hold a hearing in the locality of the complainant's residence, usually the nearest town. Two members constitute a quorum.

The Board will receive evidence such as the Ministry's report discussing the findings of a field investigation and analysis of soil samples, tissue samples, comparison with control, physical and documentary evidence such as leaf cuttings and photographs, and the written claims submitted by the claimant, which must be itemized. The Board will also hear any *viva voce* evidence produced in support of the claim or against it.

No transcripts are kept of evidence taken at hearings. Board members usually make brief notes of information they consider pertinent for their own purposes; however, they provide no written report either to the Ministry or to the parties. Following the evidence, the chairman will usually adjourn the hearing to discuss the matter with each party separately. The Board members will discuss the matter among themselves and arrive at an assessment of reasonable compensation. The Board will then call the parties together and make a recommendation. The members will then discuss privately with the person responsible whether he will accept this recommendation. Usually the person responsible does so. In a few cases, one party has rejected the Board's recommendation and the parties have later reached their own settlement. In "one or two" cases, the claimant abandoned his claim following a hearing.[36] If either party refuses to accept the Board's recommendation, the Board may reconsider its recommendation and revise its assessment of damage, but usually not substantially. The hearings may not be completed in one sitting, and may proceed intermittently over a period of weeks.

It is difficult to evaluate the success of this unusual combination of investigation and negotiation procedures. No studies of the Board have been made by the Ministry, by other government departments, or by independent investigators. The government has never attempted to evaluate the usefulness of these mechanisms. The hearings are held *in camera*, the Board issues no written report and keeps no record of its recommendations, and as a matter of policy, the names of parties to Board hearings are not divulged. Because of this confidentiality requirement, it is difficult to ascertain the perceptions of parties to the process or determine the extent to which they are satisfied or dissatisfied with the process. In effect, the only viewpoint available to researchers is that of the Board members and government officials.

The lack of any standard forms or rules of procedure makes it difficult to do an analysis of the fairness of the procedures used. Once the Board has made its recommendations, the parties decide privately whether to accept it, and no record is kept of whether the parties have reached agreement. The belief of Ministry officials that most parties agree to follow the Board's recommendations is impressionistic.

However, a tentative analysis of the effectiveness of this procedure can be arrived at using our criteria of causation, costs, cause of action scope of damages, fullness of recovery, and limitation periods.

The Act requires the Ministry to give a copy of the report based on its investigation to the "person responsible for the source of contaminant" and allows the Board to meet with the claimant and the "person responsible." "Person responsible" is defined in the Act, as the owner or person in occupation or in charge of the premises from which the contaminant is emitted. The phrase does not imply a finding of legal responsibility by the Ministry. Unless the person alleged to be responsible by the Ministry admits responsibility, the claimant must establish causation in civil proceedings to recover. However, the Ministry's investigation is helpful to the claimant in alleviating the cost involved in the onerous task of establishing causation. It is unclear whether the

Ministry officials use the same criteria in making a finding of causation as would the civil courts.

The Phytotoxicology Section and the Board of Negotiation have essentially separate functions, although in practice there appears to be some overlap. The Phytotoxicology Section's role is to establish causation. If an alleged source of contamination wants to dispute causation, it would probably do so during the Ministry's investigation rather than before the Board. If it denied any causal connection between the damage and its operations, it would be unlikely to appear before the Board. As a result, Board hearings do not deal with the threshold question of whether the person alleged to be responsible caused the damage. In only one case has a company alleged to be responsible for contamination, voluntarily appeared before the Board and denied any causal connection.[37]

However, the distinction between the functions of the Board and the Section is blurred somewhat by the fact that Board members will accompany Ministry officials during their investigation and that the extent of causation is often in issue at Board hearings. Persons alleged to be responsible will frequently allege that the damage is attributable in part to natural causes or to other sources of contamination. The Board has never disagreed with the Ministry's basic finding of a causal connection. It appears that the Board would consider this beyond its jurisdiction.[38] However, while the Ministry will determine what causal factors are at work – for example, a combination of pollutants, disease, and insects – and the Board will determine the degree of injury attributable to each cause and make its recommendation for compensation on the basis of this opinion.

The process of recommending compensation appears to focus more on the injury than on the fault or negligence of the person responsible. Once a Ministry report has found a person "responsible" in the sense of having caused an injury, the Board will attempt to negotiate a settlement regardless of defences such as lack of fault that would be available at common law. Compensation in this sense is independent of any requirement to establish fault or any cause of action. However, if a person found to be responsible for injury in the sense of having caused it believes that he would not be found legally liable in a civil action because of his lack of fault, act of God, or some other defence available to him at common law, he is under no obligation to negotiate, and can force the claimant to fall back upon his common law rights and remedies. Despite this, officials report that no person found "responsible" in a ministerial report has ever refused to appear before the Board.[39]

The scope of damages is narrow. The Board may consider only economic loss resulting from injury or damage to livestock, to trees, or other vegetation. Thus, the provisions are of benefit primarily to farmers and to a lesser extent to householders suffering harm to their gardens. Compensation is usually limited to the loss sustained in a single crop year; however, when continuing contamination has resulted in reduced soil fertility or the total inability of the land to produce a crop, a single lump sum settlement may be recommended.

Although there is no limitation period on hearings before the Board, the Act directs the Ministry to investigate only if they are contacted by the complainant within 14 days after the injury or damage becomes apparent. Presumably this is to ensure fresh evidence for scientific analysis; however, it is difficult to understand why the particular time limit of 14 days was set, as the time within which evidence of contamination must be analysed would vary from a matter of hours in some cases to years in other cases.

As of December 1980, the Phytotoxicology Section had received approximately 2,000 complaints since 1969, an average of about 200 a year.[40] Investigation found approximately 50 per cent of the injuries to be unrelated to any contaminant. Ten per cent of these complainants (20 per cent of the 50 per cent of cases in which an investigation finds injury to be contaminant-related) make a formal claim for compensation. The Ministry believes that about half of these causally connected complaints are resolved through abandonment without any monetary settlement, the complainant being satisfied with abatement measures taken as a result of the investigation and that the other half are settled on the basis of the Ministry's report without the need to make a formal claim.[41] Since 1969, there have been 189 claims. Most of these claims have been settled or abandoned after filing of the claim with the Ministry without a hearing by the Board. The Ministry does not know how many of these claims have been settled on the basis of its report and how many have simply been abandoned. The Board heard 38 claims between 1969, when it heard its first claim, and May 1978. No claims reached the Board in 1973, 1976, 1977, or 1978.[42] The amounts of claims vary from $19 to $62,000 but most claims are in the $2,000 to $3,000 range.[43]

On the basis of the information available, it is apparent that the Board of Negotiation is useful primarily in clear, simple cases involving relatively small claims. Its inability to compel any negotiations in cases where causation or liability may be unclear may account for the small number of hearings requested, or the persuasiveness of the Ministry's

report may result in satisfactory settlement of disputes in so many cases that hearings become unnecessary.

In any event, despite Ministry claims that the possibility of hearings by the Board acts as a strong inducement to settlement, it appears more likely that the field investigation and subsequent report of the Ministry, coupled with a clear possibility of litigation where the Ministry has found causation, is a stronger inducement to settlement than the threat of being served a notice requesting an appearance before the Board, which cannot compel attendance or make binding rulings. Although the provisions regarding ministerial investigation would be of assistance to a victim of pollution, the Board cannot provide any remedy. In the face of a substantial conflict, the victim must still ultimately rely upon the judicial system with its obstacles to compensation.

The Pesticides Act — Ontario

The *Pesticides Act*[44] establishes an elaborate scheme of licences, permits and requirements for record-keeping, storage, selling, display, and transportation of pesticides. These legislative provisions are designed to ensure that only properly registered pesticides are sold and that they are used in an appropriate manner by experienced individuals. However, the Act deals only with only one of the common law obstacles to compensation, namely, the availability of funds for compensation. Furthermore, although the Act regulates almost all sales, uses, and disposal of pesticides, the compensation provisions deal only with pesticides when used by professional exterminators. Consequently, although the legislation is quite comprehensive with regard to its regulatory provisions, which seek to prevent harm, it is almost devoid of provisions that would assist in obtaining compensation in the event of damage.

The Act requires the operator of an extermination business to insure against potential liability or to furnish a bond as prescribed by the regulations[45] made by the Lieutenant Governor in Council. Under the regulations, the operator is required to carry at least $25,000 worth of coverage of injury to each employee. The regulations also provide that this insurance policy may have a maximum liability of $50,000 for any one incident. In addition, "structural" exterminators are also required to carry third party liability insurance of at least $300,000 with respect to the death of or bodily injury to any person and at least $200,000 with respect to property damage. Again, the insurance policy may limit liability to $500,000 for any one incident. In contrast, "land" exterminators are required to carry third party liability insurance of at least $200,000 for personal injury coverage and at least $10,000 for property damage. For "land" exterminators, the insurance policy may have a maximum liability of $200,000 for any one incident.

The insurance provisions of the *Pesticides Act* are merely to help to ensure that, if liability is established against one type of potential polluter, some funds should be available for compensation, leaving completely untouched the other common law obstacles to compensation.

The Waste Well Disposal Fund — Ontario

There are many examples in Canadian legislation of licence fees that are pooled into a fund available for remedial activity when industrial activities damage the environment,[46] but these mechanisms do not usually cover third party compensation. One fund that is clearly designed to compensate pollution victims is the Waste Well Disposal Security Fund established under the *Environmental Protection Act*.[47] Every owner of a well that is used for disposal of waste must pay a fee to the Treasurer of Ontario calculated on the basis of the amount and type of waste disposed of in the well. The rate is to be based on an estimate by the Director of the amount and type of waste disposed of in the well in the previous calendar year or, if waste was not disposed of in the previous calendar year, an estimate of the amount and type of waste likely to be disposed of in the current calendar year. Thus, it would appear that the rate is to be established individually for each operator. The Treasurer is to pay these fees into a fund. If the water in any well, body of water, or watercourse that any person uses for ordinary household purposes or for the watering of livestock, poultry, home gardens or lawns, or for irrigation or crops grown for sale is rendered unfit for this use as a result of the operation of any well used as a waste disposal site, the person suffering the harm is entitled to compensation out of the fund. This right to recovery is limited to the amount in the fund and proration of available monies among persons suffering losses. Therefore, the fund only guarantees availability of funds for compensation to the extent of the money available in it and not to the full extent of all losses. In the event of a large number of losses or a small number of very large losses, no full compensation could be obtained if the fund were depleted, except by falling back on common law action.

Compensation is not available until after the Director has investigated and determined whether there are reasonable grounds for believing that the disposal of waste in such a well caused the damage. If the Director makes this finding, he then decides the

amount of the claimant's reasonable and necessary expenses incurred in obtaining an alternate supply of water substantially equivalent to his previous supply in quantity and quality. He then sets out his determination and written reasons for it in a "certificate" and sends a copy of it to the claimant. If the claimant is dissatisfied with the finding or with the assessment of damage, he has the right to appeal the decision to the Environmental Appeal Board. To be eligible for compensation, the person suffering must give notice of his claim to the Director within six months after becoming aware that his water has become unfit. However, the Director has discretion to extend this limitation period if he wishes.

As of 31 March 1979, including interest on fees, there was approximately $281,000 in the fund. No claim has ever been made and, to the knowledge of the fund's administrator, the operation of disposal wells has never caused any well water contamination.[48] The fund has been criticized because of its administrative complexity and the anticipated delay involved.[49] In the case of unfit water, the urgent need is for an immediate replacement source and uncontaminated containers for the new supply of water. However, the Act effectively requires the farmer or householder to pay for his own replacement source of water initially and obtain reimbursement later. Moreover, the most substantial cost is not the water, but the container, for which compensation is not available out of the fund. The fund has been described by one Ministry of Environment official as "useless."[50]

Licence Conditions: the Stouffville Case – Ontario

Although security instruments appear to have great potential for meeting potential liability for compensation, they have not been widely used for this purpose. The author is aware of only one case in which security has been applied to this purpose, as a condition attached to a licence for a waste disposal site under the Ontario *Environmental Protection Act*. The Ministry of the Environment imposed a condition on a Certificate of Approval issued to a waste disposal company in Stouffville, Ontario, that the company "pay to the Ministry of the Environment the sum of $80,312.69 to be held in trust in the Consolidated Revenue Fund of the Province of Ontario to be used at the discretion of the Minister to finance any abatement measures which it becomes necessary to take in connection with the operation or existence of the site."[51]

This condition was imposed despite a possible lack of authority to do so. If the Ministry is worried that an applicant for a licence to operate a waste disposal site may abandon the site in an unsatisfactory state, the Environmental Protection Act authorizes it to order the applicant to deposit cash or furnish a security bond to assure satisfactory maintenance of the site or system or removal of waste from the site. However, this cash or bond can only be ordered "in such amount and upon such conditions as the regulations prescribe"[52] and no provision has been made in the regulations to date. Despite this lack of authority, the Minister does have the power to attach conditions to a Certificate of Approval,[53] and he used this power to impose the condition on York Sanitation Company Limited. The amount of the fund was based on estimates by the company's consulting engineer of costs to replace the private water supply for seven properties in the immediate vicinity of the landfill site.[54]

The amount was arrived at in negotiations between representatives of the Ministry and the company's consultant without any consultation with adjacent landowners or other members of the public who expressed opposition to issuance of the licence fee.[55]

This condition was imposed following a 30-day public hearing by the Environmental Hearing Board, at which time the main issue was whether operation of this sanitary landfill site would contaminate the groundwater and pollute the municipal wells providing drinking water for approximately 6,000 people as well as the wells of the surrounding landowners. Following the hearings, the Board said:

> The Board is concerned that the fund for compensating persons whose water supplies might be affected may not be sufficient since corrective measures could be expensive. Although the onus of establishing such a fund is placed on the applicant, the Board is of the opinion that the Province of Ontario should give consideraton to guarantee the fund.[56]

This recommendation apparently applied to the potential danger to the municipal wells in addition to surrounding the landowners' wells; the Ministry of the Environment chose not to require security sufficient to provide compensation in the event of contamination of the municipal wells or to provide any guarantee that the government would provide such compensation. The reason for this was that the Ministry did not agree with the Board that there was any significant danger to the municipal wells.[57] However, it is interesting to speculate whether the Ministry would have been prepared to require a substantially larger security from a private business had it felt obliged to carry out the recommendations of the Board. The Ministry and the applicant eventually settled on the applicant giving the Ministry an irrevocable letter or credit from its bank for the sum rather than cash, as

required by the condition in the licence. The important consideration, however, was that this was irrevocable and therefore provided as great a protection as if it were cash. It would appear that if local wells were to be contaminated, the Ministry would be in a position to use this security to pay for replacement water supplies. However, in the event of a dispute over causation of the contamination between the Ministry and the operator of the landfill site, it is unclear whether the Ministry would have authority to so apply these funds without a prior judicial determination of liability.

The Environmental Protection Act, Part VIII-A – Ontario

Amendments to Ontario's *Environmental Protection Act*[58] were introduced in the Ontario Legislature in December of 1978 but were not passed until December of 1979 because of intensive lobbying by environmental groups and industry. The focus of this lobbying was the nature of the third party compensation liability the government envisaged. The purpose of the amendments was to provide a legal basis to make persons in the business of manufacturing, storing, transporting, and marketing pollutants responsible for spills. The amendments impose joint and several liability on owners and persons in control of contaminants at the time of a spill to notify the Ministry of the Environment promptly, to clean up spills and ameliorate adverse effects on property, to restore the environment, and to compensate anyone who suffers a loss or injury as a result of the spill.

Part VIII-A of the Act authorizes the Minister of the Environment to give the owner and person in control specific orders and directions following a spill. If the person to whom the order is directed does not take the required remedial action, the Minister may order his staff to do so and may sue to recover the cost. Although both the owner and the person in control of the contaminant are initially liable for cleanup, restoration, and compensation, each of them has a right to take legal action to recover all or part of the cost from any other person who would have been liable at common law. Thus, if a spill results from negligence, or damage is aggravated by negligence in carrying out a cleanup, any person who was not at fault or whose fault or liability is shared with others may seek contribution or indemnification.

Part VIII-A establishes an Environmental Compensation Corporation. Its objects are not only to give financial assistance to persons suffering losses, but also to assist small- and medium-sized businesses upon which the liability imposed by the amendments could place a heavy financial burden. Section 68c provides:

> The owner of a pollutant and the person having control of a pollutant that is spilled and that causes or is likely to cause adverse effects shall forthwith do everything practicable to prevent, eliminate and ameliorate the adverse effects and to restore the natural environment.[59]

This duty applies regardless of fault or negligence and regardless of whether the owner and person in control took reasonable precautions or exercised due diligence to prevent the spill.

The nature and extent of the compensation liability is less clearly defined. The original version of the amendments said only that the compensation liability did not depend upon proof of fault or negligence. In response to requests to clarify the nature of the compensation liability, the Ministry amended the Bill to provide that it was absolute. Industry representatives reacted strongly against the concept of unlimited absolute liability. As a result, the Ministry introduced into the Bill a compensation fund to alleviate any hardship to industry that might result. After further lobbying by industry, absolute liability for compensation was replaced by liability with exceptions similar to those in the *Fisheries Act* and the *Arctic Waters Pollution Prevention Act*. Ultimately, industry representatives were successful in having the Bill further amended to provide that if an owner or a person in control of a pollutant establishes that he took all reasonable steps to prevent the spill he is not liable for compensation.

The amendments establish an Environmental Compensation Corporation composed of three or more directors appointed by the Ontario cabinet. The Corporation is empowered to make payments to any person who has suffered loss or damage as a direct result of a spill, of carrying out any cleanup duties ordered by the Minister, or as a result of someone's neglect or default in carrying out a duty or order or direction. Municipalities and designated classes of persons authorized to take remedial action may recover their costs from the Corporation. The owner of the pollutant and the person having control of the pollutant who are liable to pay compensation may also apply to the Corporation for financial assistance. The Corporation is authorized to sue the person or persons legally liable for loss or damage to recover any money it pays out.

The exact functions of the Corporation are problematic. The classes of persons entitled to payments by the corporation, conditions precedent and subsequent to payment, limits on payments that may be made, and claims procedures all are to be established by regulations. The amendments also contemplate the exemption of some classes of spills of pollutants and of losses, damages, and costs through

regulations. The amendments address the issues raised in our earlier discussion in the following manner.

Causation — Section 68i provides that any person has a right to compensation for loss or damage incurred as a direct result of the spill of a pollutant that causes or is likely to cause adverse effects. He may recover from the owner of the pollutant and the person in control as well as their successors and assigns. Normally, he will have to institute legal proceedings to recover. However, if the person suffering the loss cannot establish the source of the spill, it is likely that he will be able to apply to the compensation corporation for payment.[60]

In court, the victim must prove his losses and prove that they were the direct result of a spill. However, the requirement that the pollutant be one that causes or is *likely to cause* the adverse effects resulting in his loss may open the door to the use of epidemiological evidence to show causation or a shift in the onus of proof of causation. It may be arguable on the basis of this language that, in cases where the effects of a contaminant on property, environment, or health are uncertain, the onus shifts to the defendant to prove that the pollutant did not cause the harm once the plaintiff proves that the spill of the contaminant is consistent with the adverse effects experienced.

Basis of Liability — In providing that the owner and person in control are not liable for compensation if they establish that they took all reasonable steps to prevent the spill, the Legislature has grafted the quasi-criminal strict liability concept enunciated in the *Sault Ste. Marie*[61] case onto the common law to create a new statutory defence. It is unclear whether the basis of liability under the EPA amendments is a nuisance test or a negligence test.

Moreover, if this new test is less stringent that the common law strict liability enunciated as the principle in *Tylands v. Fletcher*, it is unclear whether the statutory liability or *Rylands v. Fletcher* would prevail. Section 68l provides:

> Except as expressly provided in this Part, nothing in this Part limits or restricts any right or remedy that any person may have against any other person.

This may mean that, where Part VIII-A and the rule in *Rylands v. Fletcher* create different standards, the court may apply the more stringent standard. However, on the basis of the canon of construction that the specific always overrides the general, it is arguable that, if the liability imposed by Part VIII-A is less stringent, the specific language of section 68i would override the more general provisions in 68l. The Minister of the Environment told the committee of the Legislature reviewing this Bill that it was not the Ministry's intention to override any more stringent common law principles.[62]

Scope and Measurement of Damages — Loss or damage includes personal injury, loss of life, and pecuniary loss, including loss of income. The loss or damage must be a direct result of the spill. The inclusion of income as a compensable loss may remove some of the doubts surrounding this head of damages; however, the requirement that damages be direct will undoubtedly limit the scope of recovery. Thus, it is questionable whether the amendments extend the common law liability for pure economic loss.

In cases where the victim recovers directly from the fund, the kind of damages and their measurement will depend on the regulations made. It is likely that regulations will provide for recovery of less than 100 per cent of losses in some cases.

Cost and Timing of Recovery — The amendments contemplate that in most cases the victim will still use the courts. Except where the victim can come directly to the Environmental Compensation Corporation, compensation will not be available until after settlement or judgment. Delay will continue to be in the defendant's interest. However, changes in the basis of liability should lead to earlier and larger settlements, reducing the overall cost of negotiations and eliminating much litigation.

Where the plaintiff has obtained a court judgment but has been unable to execute his judgment because of the insolvency or bankruptcy of the defendant or for some other reason, he will probably be entitled to apply to the fund for payment. In such a case, the Ministry contemplates minimizing costs and delay by relying on judicial assessment of damages and determination of questions of liability.[63]

Where the Environmental Compensation Corporation is involved, although the procedures set out in the amendments are skeletal, it appears that they will be streamlined. They are to consist of a written application for compensation to the Corporation, a proposal made by the Corporation in response, and acceptance or rejection of this proposal by the claimant. A claimant disatisfied with the amount offered will have the right to appeal the decision or the amount to a court. In dealing with the Corporation, the struggle between the person suffering the injury and the person alleged to be liable will be eliminated, which should substantially reduce cost and delays.

Availability of Funds — In most cases, availability would still depend initially upon the assets of the defendant and on insurance. However, where a person responsible for a spill is unknown or the

plaintiff cannot collect on a judgment, the Corporation may provide the funds. The funding of the Corporation for its first year was to come from the provincial Consolidated Revenue Fund, after which the Ministry was to consider whether a more equitable method of funding using contributions from industry or a combination of industry and government could be established.[64] Availability of funds depended initially on whether the government could appropriate sufficient money to fully cover all claims arising. At that time, the government gave no indication whether it would supplement them or how it would prorate available funds among claimants, in the event that revenues were insufficient.

Limitation of Actions — The amendments initially established a six-year limitation period, but after representations from industry spokesmen, this was changed to two years from the date when the person knew or ought to have known of his loss or damage.

Class Actions — No provision is made for collective action. An amendment introduced by members of the New Democratic Party to enable victims of pollution to launch class actions was defeated.

The major innovations introduced by Part VIII-A are its reforms to the basis of liability and the establishment of a fund in the form of a Crown corporation. The major weaknesses of the amendments are their restriction to spills and their lack of application to routine discharges and emissions. Thus, industry's liability for conscious decisions to pollute regularly is less than its liability for unintended accidents. It appears that the reason for this dichotomy is the wider availability of insurance to cover "sudden and unexpected" occurrences such as spills than to cover routine emissions. The amendments define a "spill" as a discharge into the natural environment in a quantity or with a quality at the location where the discharge occurs. "Discharge" includes a leak, deposit, or emission. The amendments therefore appear to apply to more than the sudden and unexpected occurrences covered in most third party liability insurance policies but not to established, routine factory emissions. Nevertheless, the subject matter of the amendments is much broader than most of the existing legislated schemes that apply to narrow classes of victims, substances, or sources.

The Fishermen's Assistance and Polluters' Liability Act – Manitoba

Unlike the federal statutes and Part VIII-A of the Ontario *Environmental Protection Act*, which retain the concept of an adversary position between the victim and the alleged polluter, the Manitoba *Fishermen's Assistance and Polluters' Liability Act*[65] interposes the government between the victim and the polluter as the initial source of compensation. The major provisions of this Act have been described in our discussion of the constitutional framework for legislative reform. The Act was drafted hurriedly in response to a particular situation and therefore is highly specialized, dealing solely with financial loss to commercial fishermen from stationary sources of pollution such as factory premises or pulp and paper mills. Under the provisions of the Act, the designated minister may make payments, in such a manner, and under such terms and conditions as he deems appropriate, to persons presently or formerly engaged in commercial fishing who, in the minister's opinion, have suffered or will suffer financial loss because fishing is prohibited due to the contamination of waters resulting from pollution. If a payment is made to an individual, the government may require an assignment from the payee of the right to bring an action against the alleged polluter.

From the victim's point of view, the common law obstacles to compensation are overcome since he may receive compensation for his financial loss directly from the government. However, the victim has no right to government compensation. The power to make payments is discretionary and the government may give payments outright or as a loan and subject to whatever terms and conditions the Minister deems appropriate.

In a subsequent suit by the government against the alleged polluter, the government is required to establish that the defendant has discharged the contaminant from his premises and that fish have therefore suffered death, disease, or injury or contamination rendering them unfit or unsafe for human consumption or otherwise unmarketable. To establish liability, the government must adduce the same degree of proof as required in a civil suit; however, the Act shifts the onus of proving lawful excuse to the alleged polluter.

Unlike the federal legislation and Part VIII-A of Ontario's *Environmental Protection Act*, which purport to abolish all defences except specific listed defences, the Manitoba legislation retains the common law basis for liability and defences except for those specifically abolished. The polluter may not argue in defence that the waters have been or are being polluted by other persons or sources in addition to his own discharges, that it cannot be established that the contaminant in question derived from the actual volume of contaminant that the polluter discharged, or that the fishermen would have lacked standing had they sued in their own right because they had no proprietary interest in the fishery. It is sufficient for the government to establish that the

deleterious effect on the fish is of a nature consistent with a contaminant of that kind being the total or partial, immediate or mediate cause. Consequently, in a government suit for indemnification under the legislation, the requirement to prove causation is relaxed.

Therefore, as noted, from the victim's point of view, the common law barriers are removed. However, except for causation and basis of liability, which are modified to some extent, the government would continue to face these obstacles when it seeks indemnification from polluters.

Foreign Legislation

The U.S. Superfund of 1979

This Bill, more properly known as the U.S. Oil and Hazardous Substances, and Hazardous Waste Response, Liability and Compensation Act, is currently before the Congress of the United States.[66] This legislation, colloquially called the "Superfund," is designed to "provide a system of response, liability and compensation for releases of oil, hazardous substances, and hazardous wastes, and to establish a response and liability fund . . . ."

A "release" is defined to include any "spilling, leaking, pumping, pouring, emitting, emptying, discharging, escaping, leaching, or dumping into the environment." However, releases do not include discharges made under the authority of a variety of governmental permits. Specifically, they do not include releases from active hazardous waste disposal sites that have been granted permits under the *Solid Waste Disposal Act*. In essence, the Bill is designed to respond to spills of oil and hazardous substances and to problems related to inactive and abandoned hazardous waste disposal sites.

The Act prohibits the release of oil or hazardous substances "in such quantities as may be harmful." The Administration may designate substances as hazardous by regulation, and may also designate by regulation the quantities in which oil or hazardous substances if released are considered to be potentially harmful to public health, safety, or the environment. Exceptions are provided for releases made in defined and limited circumstances, including discharges permitted by the executive or by international agreement. Where prohibited releases occur, fines of up to $250,000 may be imposed.

The Bill contains a number of notification provisions. Any person in charge of a vessel or an on- or offshore facility, shall, as soon as he has knowledge of any unlawful release immediately notify the appropriate government authority. Any person who is an owner or prior owner, operator, lessee, generator, transporter, or disposer of hazardous substances in relation to an uncontrolled hazardous waste disposal site must also notify the Administration of the existence and nature of the site. A person who fails to fulfill these notification requirements is subject to a fine of up to $10,000 and/or imprisonment for up to one year. Furthermore, he loses the benefit of any limit that would otherwise be placed on his liability under this Act. Thus, the Act defines its subject matter, prohibits unauthorized releases, and establishes notification procedures with penalties for noncompliance.

The Bill would also give the government wide power to intervene to effect an environmental cleanup if the responsible parties do not respond adequately or cannot be quickly identified. These cleanup provisions apply to a wide range of contaminants and to sources which are not necessarily covered by all of the other provisions of the Bill. For example, releases from active hazardous waste disposal sites are not subject to the liability and compensation provisions of the Bill (discussed below), but the government may take steps to effect the cleanup if hazardous substances are released from these sites.

With this overview in mind, our analysis of the proposed legislation will centre on the presence or absence of remedial provisions that would remove or mitigate against the common law obstacles to compensation that we have identified. The owner and operator of a vessel or an onshore or an offshore facility that is a source of pollution or that poses a threat of pollution in circumstances where removal costs are incurred is made strictly liable for all designated damages. Strict liability is defined as liability regardless of negligence, knowledge, good faith, intent, surrounding circumstances, degree of care, or any reasonable precautions. Consequently, the claimant need not establish that the responsible party was at fault. The Bill provides a number of defences to this strict liability. Specifically, there is no liability on the part of the owner or operator where damages are caused solely by an act of God or an act of war; or where the loss is caused, in whole or in part, by the gross negligence or wilful misconduct of the claimant.

The designated costs or damages for which the responsible party is strictly liable are confined to the following: removal costs, injury to or destruction of real or personal property, injury to or destruction of natural resources including costs for damage assessment, and loss of opportunity to harvest marine life due to injury to or destruction of natural resources. No allowance is made for personal injury or for loss of income other than loss of income arising from

destruction of marine life. Moreover, the term "pollution" is defined so as to exclude releases from a hazardous waste disposal site. Consequently, no compensation is provided, either from the responsible parties or from the fund discussed below, for third party liability when the damage occurs as a result of a discharge from any hazardous waste disposal site. Furthermore, although operators, owners, and others responsible for uncontrolled hazardous waste disposal sites are required to notify the government of discharges, they have strict liability only for "emergency assistance" costs borne by the government.

Where strict liability is imposed upon a person, it will normally be limited to maximum amounts which range from $150,000 (for inland oil barges) to $50 million (for offshore facilities such as oil drilling platforms). Specific maximum liability limits vary with the type and size of business activity. However, the responsible party may not benefit from these established limits if he is guilty of wilful misconduct, gross negligence, a violation of health, safety, construction, or operating standards, if he fails to provide reasonable assistance during emergency or containment activities, or if he fails to fulfill the notification requirements of the Bill.

The Bill seeks to ensure the availability of compensation funds in two ways. First, owners and operators of vessels and onshore or offshore facilities are required to establish, maintain, and provide evidence of financial responsibility sufficient to satisfy the maximum amount of liability to which they might be subject under the liability provisions of the Bill. Essentially, the Bill requires potentially liable parties to maintain insurance to the maximum levels of liability to which they might be exposed. Secondly, the legislation establishes the governmental-controlled Superfund, which is authorized to collect $1.6 billion to $5 billion in fees and appropriations over a four-year period. Any claims that would arise under the Bill, and which have not been compensated by the person responsible, may be collected from the Superfund.

The Superfund will be financed by a mixture of governmental contributions and industrial fees. It has been reported that:

> Eighty per cent of the fund established by this legislation will come from fees of up to three cents a barrel on domestic, exported and imported oil and up to one half cent per pound on the raw materials used to make petrochemicals spilled and found at hazardous waste sites. In addition, up to one dollar per pound on frequently spilled non-petroleum-based hazardous substances which are also found at hazardous waste sites will be part of the industry fee system. Twenty per cent of the fund will be financed by appropriations.[67]

In general, claims for compensation are to be presented directly to the responsible party if he can be identified. If a dispute arises as to liability or if no settlement occurs within 120 days, the claimant may elect either to commence a court action against the responsible party or to present his claim to the fund. Where the claimant makes an application to the fund and a dispute subsequently arises, the claimant may appeal the decision of the fund's administrators or to the executive. The executive will then refer the dispute either to an administrative panel or to an administrative law judge. When a decision has been made by the appropriate appellate body, that decision is not open to judicial review. Consequently, if a claim falls within the liability and damage provisions of the Bill, compensation may be obtained directly from the fund through an administrative process which does not require recourse to the courts.

The proposed legislation is laudable in its attempt to consolidate emergency response and other provisions of a number of federal statutes such as the *Clean Air Act*, the *Water Pollution Control Act*, and the *Solid Waste Disposal Act* into a more comprehensive regime. The new fund would consolidate and replace a number of existing federal funds including the $35 million fund set up under the federal *Water Pollution Control Act*, the $100 million fund provided for by the *Trans-Alaskan Pipeline Act*, and the $100 million fund in the *Deep Water Ports Act*.[68] The new law is also intended to pre-empt all state funds and laws for areas with which it deals.[69] The attempt to provide for availability of funds through a mixed system of government appropriations and industry fees without eliminating the nexus between creation of the risk and responsibility for payment is also laudable. The fee system is based on the philosophy that the fee should come, where feasible, from those segments of industry and consumers responsible for imposing the risks upon society.[70] As described above, this is done by identifying the kinds of pollutants that are spilled and imposing a fee on industries handling those hazardous substances.

Nevertheless, the Bill is neither comprehensive as to subject matter or in terms of removing the identified common law obstacles to compensation. The Bill undertakes remedial action with respect to the availability of compensation funds, the costs and timing of obtaining compensation, and the basis of liability. It does not direct attention towards the obstacles of causation and limitation periods. The scope of damages in some critical aspects is even more restrictive than the common law. While the Bill would remove some obstacles created by the common law, it would do so for specific sources of pollution and limited kinds of damages. An individual

who wants to recover for personal injuries or loss of income generally will not be assisted by the Bill, nor can he recover any damages arising from a discharge at an uncontrolled hazardous waste disposal site. According to the Deputy Administrator of the Environmental Protection Agency:

> The reason for this is that the amount of funds which can be raised and made available for inactive and abandoned sites is limited and the projected cost of cleaning up is enormous. The costs associated with third party damage claims at these sites could be huge – at Love Canal, they may surpass $2 billion. Given limited funds, the Administration believes that the first priority must be to *prevent* exposure of people to toxic chemicals at hundreds of sites, as opposed to compensating damaged third parties at a few sites.[71]

By reducing the extent of legislative fragmentation, such legislated consolidations are beneficial both to industry and to potential victims. Despite its limitations, which have been examined in great detail by a number of U.S. environmental groups,[72] Superfund appears to be an important initiative in the field of third party compensation.

The Swedish Environmental Protection Act

Before 1969, Swedish environmental legislation was unconsolidated, consisting of various public health law and related statutes and regulations. In 1969, the *Environmental Protection Act*[73] was passed as a basis for formulating a broadly remedial program designed to protect and enhance the quality of the environment, including air, water and solid waste discharges. The compensation provisions of the Act are contained in sections 30 to 37.

The legislation provides that anyone who causes a nuisance by polluting must pay compensation. However, if the nuisance has been caused without negligence, compensation is payable "only if it is at all substantial and only insofar as it could not reasonably be deemed tolerable in view of the circumstances in the locality or in view of its general occurrence in comparable circumstances."[74] Consequently, although negligence is not necessarily the basis for establishing liability, in the absence of fault, the nuisance must be substantial and intolerable in light of local conditions or in view of its general occurrence in comparable circumstances. Therefore, the basis of liability appears to be similar to the Canadian tort system, and the circumstances in which a polluter is liable for compensation may even be more restrictive than in Canada.

The most innovative provisions concern the choice of a specialized tribunal for determining compensation claims, the method of measuring damages, and the mechanism for compelling polluters to purchase the property of the victim in exceptional circumstances.

The legislation may reduce the cost of obtaining compensation, not because it replaces the traditional judicial system and its adversarial basis as the method of establishing compensation, but because it gives jurisdiction to a real estate court of particular expertise. To obtain compensation, the individual must institute proceedings in this real estate court, which is normally the District or County Court of general jurisdiction. When this District or County Court is functioning as a real estate court, it has a special composition consisting of two judges, a technical expert and two lay assessors. This mix of judicial and administrative personnel should enhance the tribunal's expertise in adjudicating questions of compensation. In addition, its quasi-judicial composition may result in a less formal decision-making process. However, this cannot be asserted with any degree of certainty.

The legislation does not attempt to address the scope of damages, but it does deal with measurement. Section 31 provides that, although compensation for both past and future damages is normally paid in a lump sum, when the full extent of future losses cannot reasonably be estimated, the court may award an annual sum with provision for adjustments if circumstances change.

Section 32 allows the victim, in exceptional circumstances, to compel the purchase of his property as part of the scope of damages. It provides that:

> If polluting activity causes a property or part of a property to be useless to its owner, or if extraordinary nuisance is caused when the property is used, the property or part of the property shall be acquired under powers of compulsory purchase, if the owner so requests.[75]

It would be useful to study the operation of this provision to determine whether it provides a more satisfactory resolution of disputes than our system. Although owners of factories may sometimes voluntarily purchase adjacent properties in Canada, they are often reluctant to do so. Frequently, the neighbours who are most vocal in their opposition to a plant's activities act as a safety valve for the rest of the community. Firms have found that purchasing their properties does not eliminate the opposition if polluting activities affect the wider community. Removal of these spokesperson's source of concern by purchasing their property merely leads other members of the community to start vocalizing their concerns and making further requests for compensation. As a result, firms find that voluntarily purchasing neighbouring properties is an ineffective strategy and

are reluctant to do so.[76] Government, of course, can expropriate only for public purposes, and not to benefit private parties. This mechanism may provide a half-way house between expropriation and voluntary purchase.

The Swedish legislation does not appear to address most of the common law obstacles. While it is not expressly limited to spills and other dramatic occurrences or to other forms of narrow subject matter, as is the case with much of the Canadian legislation, the Swedish Environmental Protection Act appears to be aimed at gross forms of pollution and dramatic effects. This requirement persists despite the fact that often there is no one identifiable polluter or group of polluters or not demonstrable causal link that can be established between a specific act and specific ill effects. In this respect, it is interesting to compare the Swedish legislation with the Japanese compensation law described below, which focuses attention on the effects of pollution and does not require the claimant to establish the causal link between his damages and the activities of a particular polluter.

The Japanese Health Damage Compensation Law and Pollution Dispute Settlement Law

Since Japan has an overall population density more than ten times that of the United States and has the third largest gross national product in the world, this nation has been tormented by environmental problems. The most dramatic examples have been devastation of entire communities by pollution-related diseases causing death and permanent disability. In response to these problems, Japan has created the most extensive program for the compensation of injuries to health, although no similar program has been developed to expedite recovery of compensation for damage to property. In terms of comprehensiveness, the Japanese compensation legislation addresses itself to five of the key elements we have identified above as necessary to remedy defects in the common law.

Overall strategies for pollution abatement and compensation are expressed in the *Basic Law for Pollution*[77] of 1969 and in another thirteen statutes dealing with specific aspects of the pollution problem as defined in the Basic Law. We will focus attention on two of these statutes: the *Pollution-Related Health Damage Compensation Law*[78] of 1973 as amended in 1974 (referred to as the Compensation Law and the *Pollution Dispute Settlement Law* of 1970 as amended in 1971, 1972, and 1974.[79] These establish an administrative scheme to supplement Japanese civil law remedies in cases of widespread health damage resulting from pollution. The Japanese have three methods of allocating compensation for pollution damage. When pollution can be attributed to a particular source and those harmed are wealthy or numerous and well organized, there are sometimes private negotiations between the parties resulting in compensation. Judicial compensation may also be available based on general nuisance laws, which, like Western private nuisance remedies, can be applied to pollution but were not developed specifically for this kind of harm.

The civil law of Japan is based on principles similar to occidental common law, in particular the traditional principle that to receive compensation the victim must establish the defendant's fault. Consequently Japanese civil law suffers the same deficiencies as occidental common law. Because of these obstacles, neither private negotiation nor litigation has worked well as a general remedy for pollution damage.

Because of the difficulty of identifying the source and proving causation, Japanese businesses have proved resistant to private negotiations and few cases have reached the courts. Those which did were successful for plaintiffs only after prolonged, expensive litigation. However, they had a positive result: the courts ruled that in the case of widespread health damage, it is sufficient to show a high statistical correlation between the kind of activity carried on by the defendant and the occurrence of the disease, using epidemiological techniques, without having to prove causation in each case.

The relaxation of civil law evidentiary requirements for proving causation together with an administrative mechanism for establishing claims and providing payment and other forms of assistance, and a system of levies for financing payment, forms the basis for the third compensation system. This is a statutory scheme based on the Compensation Law and the Dispute Settlement Law. The 1973 law provides that those living or working in areas designated by the government as high-pollution areas can be compensated if they suffer disabilities that *might* be caused solely or partly by the pollution.

The Compensation Law has the following objectives:

> The purpose of this law is, by providing for compensation to make up for health damage due to marked air or water pollution. . . over a considerable area as a result of business activity or other human activities and by undertaking the necessary programs for their welfare, to provide for speedy and fair protection of victims of such health damage (Article 1).

For this to occur, diseases and geographic areas must be designated by government as subject to the Compensation Law. Designation is made on the basis of studies showing a high incidence of diseases believed to be related to pollution in areas where the kind of pollution believed to cause those kinds of illnesses occurs. Although the Compensation Law requires some evidence that health damage is caused by air or water pollution, it operates by focusing attention on the effects of pollution rather than on the causal force. The statute recognizes two general categories of diseases – non-specific (Class 1) diseases and specific (Class 2) diseases. The former are diseases that *could* have been caused by pollution. The latter are diseases that *must* have been caused by a pollutant. Both kinds of diseases are compensable if the person suffering them meets certain criteria.

Diseases are classed as specific or non-specific by cabinet order. Non-specific diseases are ones that can be caused by air pollution but no direct relationship can be established between specific polluting substances and the victim's ailment. They are ailments that also occur in the absence of air or water pollution. To date, chronic bronchitis, bronchial asthma, asthmatic bronchitis, and pulmonary emphysema have been designated as non-specific diseases. In contrast, specific diseases are ones known to be caused by a specific pollutant. They cannot occur in the absence of the pollutant. The designated specific diseases include Minimata (mercury-related poisoning) and Itai-itai (calmium-related poisoning). To date, the only diseases in Class 2 are ones caused only by water pollution.

Polluted areas are designated by cabinet order as Class 1 (areas of significant air pollution and non-specific diseases) or Class 2 (areas of significant air or water pollution and specific diseases).

To qualify for compensation, the victims of a non-specific disease must establish that they have resided in, commuted to, or otherwise been present in a Class 1 area for a specific period of exposure. The specified exposure period varies with the type of disease and is established by the cabinet order that identifies the area as a Class 1 area for that particular non-specific disease. Epidemiological studies are used to designate areas as Class 1 areas for particular non-specific diseases. If such a study shows that existing levels of pollution have probably caused or contributed to the occurrence of a designated disease, the area is then designated as a Class 1 area for that particular disease. Consequently, in a designated area, the causal relationship between pollutant and a non-specific disease is considered to be a population-group phenomenon with an epidemiological base. Beyond proving that he has a designated disease and the required exposure, the claimant need not prove any causation nor establish the liability of any particular source of pollution.

However, since compensation for specific diseases is based upon the scientific establishment of a causal relationship between a specific pollutant and the designated disease, it is necessary for the claimant to undergo a medical examination to determine whether he or she has the specific constellation of symptoms that identify his or her ailment with that disease and distinguish it from diseases with other causes. Thus, a claimant who alleges he has a designated Class 2 disease must obtain certification based upon a medical determination that his illness is due to air or water pollution in an area that has been identified as a Class 2 area by cabinet order. For example, if an individual is found to have two or more symptoms of Minimata disease and a clinical diagnosis concludes that these symptoms were caused by mercury poisoning, the individual will receive certification to receive compensation and related benefits.

The individual is not denied certification even if the symptoms are exacerbated by other factors such as age and alcholism. Furthermore, additional symptoms unrelated to mercury poisoning do not require certification. Although intervening variables do not per se prevent eligibility for certification, the prefectural provincial governor may reduce compensation benefits for both Class 1 and Class 2 diseases, if in consultation with the Certification Council, he deems that other factors such as alcoholism were involved in the occurrence or worsening of the condition (Article 43).

To obtain compensation, the individual applies to the prefectural governor or to the mayor of the city designated by cabinet order for "certification." Applications are referred to local Certification Councils established by cabinet order for each prefecture and city. Each Council has a maximum number of fifteen members appointed by the prefectural governor or mayor on the basis of "knowledge and experience in medicine, law, and other fields relating to compensation for pollution-related health damages." These Pollution-Related Health Damage Certification Councils have initial jurisdiction to issue certificates entitling the victim to compensation benefits. Decisions regarding certification and payment of compensation benefits may be progressively appealed to the Pollution-Related Health Damage Compensation Complaint Review Board, then to the Director General of the Environmental Agency and the Minister of International Trade and Industry. The individual has a limited right to bring a court action to overturn a

decision regarding certification or compensation benefits, including a decision to reduce compensation benefits because of the involvement of alcoholism or other factors. However, this right cannot be exercised until the Review Board has rendered a decision on the appeal.

It is unclear whether the advantages of this administrative system over civil action accrue to the victim who is unsatisfied with the disposition of his case by these government agencies on an appeal to the courts or whether the courts will apply the civil law used prior to the passage of the Compensation Law in deciding his appeal. One commentator has noted the following unanswered questions:

> Will the finding of causation and responsibility underlying the pollution levy be dispositive of these issues in a judicial forum? In what ways is the burden of proof on these issues alleviated? Equally unclear is the probative value in litigation of epidemiological analysis used in the administration of the Act. Also uncertain is whether a victim may use administrative determinations of any of these issues as a basis for injunctive or other civil relief.[80]

Upon certification, the victim or his survivors are entitled to receive up to seven types of compensation benefits: medical care benefits, physical handicap compensation benefits, lump sum survivor's compensation, child care allowance, medical allowance, and funeral expenses. With the approval of the Director General of the Environmental Agency, the incapacitated individual may be enrolled in pollution-related health and welfare programs, including rehabilitation and transfer to new locations for medical treatment. Although certification is only valid for a specific period as established by the cabinet order that designated the disease, there are provisions for certification renewals and extensions. These extensions and renewals may be granted where the prefectural governor and the Certification Council deem that there is little likelihood of recovery before the expiration of the established time limit. Refusals to grant a request for access to these programs are also open to the certification appeal procedures outlined above. Finally in the absence of a reasonable explanation, compensation payments may be withheld if the individual fails to adhere to medical instructions.

The Compensation Law implicitly recognizes the lengthy delays that may be involved in establishing a relationship between pollution and harm to health and, unlike western common law remedies, imposes no limitation period. There is no time limit on the government's right to designate a disease as pollution-related or a geographic area as subject to the compensation program and, after designation, those suffering health damage can apply for benefits at any time.

To secure the availability of compensation funds, the Japanese legislation involves a complex system, which appears to provide potentially unlimited financing for compensation benefits. Methods of financing include levies on specific companies and groups of companies, "user" taxes on motorists, and funds from general government revenue, the burden of which is distributed among local, regional, and national government.

Levies and taxes are based upon a budget established by the government on the basis of the victim populations identified in designated areas and estimates of the types and amounts of compensable costs that might be expected for that population. Different approaches to establishing liability for meeting this budget are adopted for Class 1 and Class 2 areas. In Class 1 areas, liability falls upon specific industries designated under Article 52 (1) of the Compensation Act and under Article 2 (2) of the *Air Pollution Control Law*[81] of 1968. In Class 2 areas, liability falls upon specific industries designated under Article 2 (2) and Article 17 (1) of the *Air Pollution Control Law* and Article 2 (2) of the *Water Pollution Control Law*.[82] However, Class 2 certifications and designations to date have pertained only to water pollution. In Class 1 areas, the designated industries are required to make contributions by way of a "pollution load levy." The pollution load levy is calculated as being equal to the measured amount of emissions of a designated substance during the preceding calendar year multiplied by the "per unit levy" in Japanese yen of the emission of the designated substance. The per unit levy of each region is set by cabinet order with regard to the following factors: the severity of the level of air pollution attributable to the designated substance in the specific area; the estimated amount of compensation that will be required for compensation benefits; and the level of emissions of the designated substance by the designated industries during the previous year.

To date, only sulphur oxide has been classified as a designated substance for the purpose of calculating pollution load levies.

In Class 2 areas, the designated industries are required to make contributions by means of a "special levy." Less specific provisions are made for the calculation of "special levies." The method of calculation is not prescribed by the Compensation Law. However, the law does provide that such levies are to be set by cabinet order and that they are to take into account the amount of emissions of the substances prescribed that, under Article 62 (1) "cause air and water pollution that affects designated diseases in

Class regions." Enactments, revisions, and recessions of such cabinet orders affecting special levies can only be made after the Prime Minister and the Minister of International Trade and Industry have consulted with the central council.

Both these levies are set by the cabinet and collected by an agency known as the Pollution Health Damage Compensation Association. The Compensation Association is responsible for the collection, enforcement, and allocation of these contribution levies. If a particular group of proprietors apply for a joint payment of the special levy, the Pollution Control Association has jurisdiction to approve the proposed arrangement and may make its approval subject to conditions. If Approval for joint payment is granted, the preceding provisions regarding the calculations of the special levy do not apply.

The Compensation Law involves the allocation of four types of costs: compensation benefits, costs associated with pollution health and welfare programs including rehabilitation of health care facilities, administrative costs involved in the handling of benefits, and the costs of administering the Pollution Health Damage Compensation Association.

Eighty per cent of compensation benefits are borne by the pollution load levy and the special levies. The remaining 20 per cent is contributed by motorists through an automobile and motorcycle weight tax. One-half of the costs associated with pollution health and welfare programs is met by the pollution load levies and the special levies, one-fourth by regional governments, and one-fourth from national tax revenues.[83] Similarly, the cost of the Compensation Association is borne by industry with a partial government subsidy. Finally, administrative costs relating to the handling of benefits are borne equally by the national government and the specific prefectural or city government that ultimately distributes the benefits.

The Japanese compensation scheme is laudable in terms of its comprehensiveness. It appears to incorporate improvements over the Anglo-American common law system at least potentially with respect to five of the areas in need of reform. The certification process, which focuses upon the effects of pollution rather than upon their cause is a particularly attractive response to the problems of cost, causation, fault, and limitation periods. The legislation deals with the problem of the cost of obtaining compensation in two ways. First, by removing the need to establish causation or a specific cause of action, the system significantly reduces the need for lawyers and experts and relaxes the burden of proof a common law judicial process would place upon the victim. Second, by removing the polluter from the assessment of claims and eliminating any struggle between the individual claimant or group of claimants and individual sources of pollution or groups of companies responsible for polluting, the system simplifies the process of obtaining compensation.

Any compensation system that replaces the court as a decision-making forum with an administrative agency can be assumed to be an attempt to reduce the obstacles and cost existing when the court is the sole forum for establishing compensation and thus can be evaluated using our model in terms of its comprehensiveness. The effectiveness of the attempt, however, can be judged only from experience. An administrative process can be just as time-consuming and onerous as a judicial process. This is particularly true when a judicial body is designated as a forum for appeal from the administrative process or judicial review of the administrative procedure is available. There is some evidence that in fact the administrative procedures established by the Japanese legislation have been able to respond quickly in many cases and consequently reduce the time and cost involved in obtaining compensation. As of 1 September, 1974, some 12,574 people had been certified to receive compensation under the Compensation Law passed in 1973. By the end of March 1975, some 20,665 people were covered under the law.[84] This would indicate that the law has achieved some success in meeting its primary purpose of expediting the compensation of pollution victims and resolving pollution-related disputes. However, it has been suggested that these settlements represent only the most extreme cases of health damage, and that the criteria for victim designation are too narrow to cover many pollution-related illnesses.[85]

The need to prove causation has not been eliminated, but has been incorporated into the process of designating diseases as pollution-related and areas as high-pollution areas. One commentator has noted that "official designation has always been subjected to conflicting political pressure and bureaucratic procrastination."[86] Epidemiological, clinical, and experimental data always leave open to some extent the question of causation. Opposition of industry groups who will pay for compensation to any designation that cannot be demonstrated to rely on a fairly strong probability of a causal link, on the basis of unfairness, mitigates against the designation of illness or pollution zones without a strong degree of scientific certainty. The need to demonstrate such a causal link has led to "inflexible, cumbersome and costly procedures."[87]

This scientific conservatism has inhibited the extension of the system to a wider range of diseases and victims. Atypical disease patterns and pollution-

related illnesses whose etiology is unclear may result in denial of compensation. Critics of the compensation law have alleged that the criteria for victim designation create arbitrary classes and unjustly exclude many potentially eligible individuals.[88]

The most serious deficiency in the Japanese scheme has been its restriction to health-related losses and its narrow scope of damages. It does nothing to assist those who suffer damage to property or loss of income resulting from destruction of property or loss of trade. These victims must presumably fall back upon their common law remedies. If patterns of environmental damage in Japan are at all similar to those in North America, where damage to property, loss of use and enjoyment of property, and loss of income from contamination of crops and fisheries are far more common than overt health effects, the compensation law does not address a major problem.

The scope and size of benefits available have also been subject to criticism. The *Basic Law for Pollution Control* of 1969 and the *Law for Relief of Damage to Health* of 1969 only covered the cost of medical care. Subsequently, this extremely narrow definition of damages was severely criticized.[89] The compensation law has since been amended several times so that by 1974 the seven types of benefits described above would be available. Nevertheless, although there has been some enlargement of the scope of damages that are recognizable, the Japanese legislation does not provide compensation for pain and suffering, property damage, or loss of earnings resulting from damage other than impaired health. Although some local governments provide their own compensation systems with wider benefits, there is no national relief system for such losses.

The size of disability payments has generated controversy. The established rate of 80 per cent of the average monthly wage of the worker is a compromise between the full monthly wage demanded by the victim and lower levels paid under the Japanese workmen's compensation system, which industry pressed for.[90]

The Compensation Law is a mixture of systems, linking an administrative no-fault compensation scheme with a pollution levy, while preserving available judicial remedies and integrating its procedures with regulatory measures in other laws. Its most innovative aspect is its application of statistical proof methods to pollution disease causation and its financing of compensation payments through a combination of pollution levies, user taxes, and general revenues together with a mechanism to ensure collection. The most significant aspect of the certification approach is that it represents a comprehensive effort to effect fundamental reform with regard to causation and fault, the streamlining of claims procedures, and the avoidance of a psychologically and financially debilitating struggle between the victim and the person alleged to be responsible. By basing compensation upon observable results rather than elusive causes, the system offers an attractive alternative to traditional Anglo-American concepts. By focusing attention on the individual's health rather than on the polluter's fault, the legislation is able to move beyond harm caused by dramatic and readily observable forms of pollution, although it is still limited by the state of scientific knowledge, which inevitably lags behind the harm caused by pollution. Unlike western approaches, which have tended to focus on spills, the Japanese legislation is sufficiently broad to allow compensation for on-going emissions and more insidious discharges. By recognizing that pollution damages are often the untraceable results of our total socio-economic system, the legislation offers a more realistic basis for compensation than common law.

Despite its relative comprehensiveness, however, the reliance of the approach upon government orders and administrative decisions raises in western minds questions of the stability of the system, the possible abuse of discretion, and public involvement in the decision-making process. In practice, the specific effectiveness of the certification approach will depend largely upon the equity displayed by the government and its agencies in designating specific and non-specific diseases, in identifying Class 1 and Class 2 areas, and in processing individual applications and appeals. While decisions on individual applications and appeals are open to review by the courts, the designation of diseases and pollution zones is essentially a political decision.

As an attempt to combine an expeditious procedure for providing compensation with incentives to industry to abate pollution and an attempt to reach a compromise between equity to pollution victims and equity to industry, the Compensation Law falls short of addressing the true social cost of pollution and allocating it to the person responsible for loss or injury. Costs such as property loss, some losses of earnings, pain and suffering, and the difference between the wages a disabled worker would earn if he had not been injured and those provided by the system are allocated to the victim, rather than to polluting industries or society at large. While the funding mechanism is a significant advance over common law, since it does appear to ensure that industry and government contributions will be available as necessary to compensate pollution victims,

the mixed allocation and the method of collection have been lauded as being fair to industry, because the regularity of the charge allows the polluter time to plan for the additional costs and to avoid being suddenly wiped out;[91] but it has also been dismissed as a "licence to pollute" as it does not allocate the full cost of pollution to the polluter.[92] It has been suggested that, although the emission charge imposed is linearly proportional to increased emissions, it may be shown to be inequitable if damage costs turn out to increase at an exponential rate while the charge remains linear; such a turn of events would impose a disproportionately onerous burden on small or medium-sized companies and grant an economic advantage to larger enterprises.[93] The potential externalization of costs associated with the establishment of the system, enforcement, the special collection agency, and the appeal system to which tax funds contribute suggests some degree of inequity and inefficiency from the perspective of economic theory. However, in practice it has been noted that the actual redistributive effect of the Japanese system and other consequences of the present resource allocation decisions are unknown and require further study.[94] Apart from these theoretical considerations, the only evidence of actual economic disadvantage that the compensation system has been known to cause is severe financial distress to the Chisso Corporation as a result of payments it has been required to make under the law to victims of Minimata disease. To keep Chisso afloat, the Japanese government gave the company a low-interest, long-term loan of about $6.5 million.[95] However, the pollution incident resulting in Chisso's responsibility for payment was of an exceptionally harmful nature, and probably not representative of the financial liability incurred in the vast majority of cases. If anything, the Chisso loan may be an argument for a *prima facie* obligation on companies to bear the full cost of compensation with provision for special consideration in exceptional cases; the alternative would be the need to impose an upper limit on liability in all cases, which might be inconsistent with variations in resources available to polluters to discharge their obligations. The Chisso example shows the ability of government to step in to mitigate harsh consequences of increased liability to pay compensation, taking into account the unique circumstances of each case, rather than the need to deviate *a priori* from the polluter-pays principle.

6 Conclusion

There can be little doubt that a broad-based, comprehensive system for compensating pollution victims should be established. Not to do so is to create a society in which a person's compensation for loss or injury depends on the vagaries of whether he is run over by a car, injured while assisting police to apprehend a criminal, struck down by cancer resulting from occupational exposure, or exposed to hazardous substances in the natural environment. There is no real difference in principle in these cases and there should be no difference in result. The result of using social insurance schemes to compensate victims of some kinds of accidents while leaving others to pursue their tort remedies is patently inequitable.

The fact that no such system has been established can be explained by society's ambivalence towards pollution. Is it the well-spring of affluence, an inevitable by-product of a system from which everyone benefits? Or is it a wrong, for which the perpetrator should be held liable. Should society pay for compensation or should the polluter? We have had no difficulty in declaring pollution to be an offence under the laws of every province, but we have been unwilling to take the next logical step and say that the act, punishable in a court of criminal jurisdiction, is also a basis for civil liability.

The theme of this study, therefore, has been in large part the tension between equity to the victim and equity to the polluter, between compensation and deterrence. The two often seem mutually exclusive.

Ison's persuasive arguments, both those in favour of a social assistance scheme covering all injuries and illnesses and those against the tort system, which have been so influential, would appear to resolve this dilemma in favour of assurance that victims will be expeditiously and inexpensively compensated, but at the expense of a dilution of the polluter's responsibility if applied to pollution compensation. But there are important differences between the situations in which a social assistance scheme is appropriate and the pollution case. It is a matter of public policy nationally and internationally that the polluter should pay for the consequences of his pollution and it is also, as far as we know, economically and socially feasible. In the case of victims of crime, the argument in favour of social assistance rests on the fact that it would usually prove futile, no matter how morally correct, to attempt to obtain adequate compensation from the criminal. In the case of workmen's compensation, the worker is in a vulnerable relationship to his employer and it is probably worth foregoing the deterrent value of direct contribution by the employer to his employee's compensation to avoid the possibility of recriminations. It is probably more practical and more equitable for government to compensate the victims of tortious acts by the insane than to pit the insane person and his victim against each other in court. The victim of pollution, on the other hand, usually has no delicate relationship to maintain with the polluter, nor does the polluter necessarily share the poverty or anonymity of the petty criminal or the incapacity of the insane.

Does this mean that the victim must continue to use the tort system to obtain compensation or receive compensation from the government? There may be a number of alternatives that retain a degree of deterrence without sacrificing the goal of timely assistance. One solution is to retain a modified version of the tort system, but interpose government between the polluter and his victim, as the *Saskatchewan Fishermen's Assistance* and *Polluters' Liability Act* attempted to do. The victim would receive compensation directly from government, but government would use the courts to recover its payments from the polluter. The opponents would be more evenly matched. A second alternative would be pollution load levies such as the *Japanese Compensation Law* imposes. Cause-and-effect relationship between amount of payment and harm would be less complete, but industry's financial responsibility for pollution would be more certain than if payment depends on the contingency of substantial harm being caused. This system too might provide an acceptable level of deterrence.

Making industry financially responsible for compensation of pollution victims would have an economic impact to the extent of increased insurance premiums and liability for uninsurable portions of loss, a liability that cannot be readily estimated. Nevertheless, there is little evidence that industry could not shift this financial liability or that it would cause any undue hardship. Moreover, mechanisms are available for government to alleviate any hardship to particular companies or industries without sacrificing general deterrence, such as the loans given by the Japanese government to the Chisso Corporation.

Nor is there any evidence that general economic welfare would suffer. If there is to be a negative effect on general economic welfare, it would probably result from industry's choice to locate or relocate in a jurisdiction where it is not subject to similar restraints. But liability for compensation would be only one of many factors a firm would take into account when deciding where to locate. Potential negative impacts on economic welfare, therefore, would depend in part upon whether other jurisdictions legislate similar liability, and on whether potential compensation liability is likely to be the deciding factor when companies decide whether to locate their plant or invest their money. Certainly in the long-run, factors such as the availability and cost of energy and natural resources would seem likely to be much more important determinants. A comparative analysis of attractions to investment and economic impacts of compensation legislation in different jurisdictions is beyond the scope of this study. Japan has what appears to be more stringent liability provisions than any Canadian jurisdiction and the United States was in the process of providing for more stringent liability at the time this study was prepared, but has since backed off. Liability there would certainly be no less stringent than in Canada. There does not yet appear to be any uniform standard throughout the Canadian provinces or in other jurisdictions with which Canadian companies might trade or which might provide an attractive alternative location for industry. However, there does appear to be a trend developing towards the establishment of compensation mechanisms throughout the world.

Therefore, there does not appear to be a strong economic argument against the establishment of more comprehensive pollution compensation schemes. The scheme that should be established should not have deterrence of pollution as its primary goal, as this could only be achieved with great cost, continual friction, delay, and reduction of compensation for victims. It is easy to reach the conclusion that deterrence should not be the primary goal, since it can be achieved through criminal and quasi-criminal sanctions, inspection, abatement orders, effluent fees, sale of pollution rights, and other regulatory and economic levers.

It is more difficult to decide whether a compensation scheme should keep deterrence as a secondary goal, or eschew it entirely. Incorporating deterrence creates complexity and cost that may be otherwise avoided. It is likely that the greater the attempt to connect financial liability to individual polluters, the more costly and complex the system must be to protect the interests of those with potential liability.

The least expensive compensation system is probably the single-goal system. For example, I have suggested that it would be possible to avoid delays and cost to the pollution victim while still retaining substantial deterrence if government were to pay the victim directly out of a fund and then pursue the victim's civil remedies against the polluter in the courts.

There is no doubt that it would be more economical to simply pay the polluter and raise the general levy or taxes than to try to recover awards from polluters in the courts. This would avoid the cost of lawyers, court time, making decisions about whom to pursue, and collecting damages awarded. It might be less expensive to ignore individual polluters and deal with them through other mechanisms, even if widespread reform of the tort system were to enhance the chances of success and make it faster and cheaper to use the courts.

But is the cheapest system necessarily the best? The financial savings of an entirely government-run system of "handouts" might easily be overridden by social costs – the loss of dignity and independence of the individual accepting the "handout," political expediency in setting levels of compensation, and dilution of industry responsibility for harm caused by pollution. Certainly our old age pension schemes, unemployment insurance systems, welfare benefits, and workmen's compensation schemes, which have lagged far behind rates of inflation, resulted in lengthy delays in obtaining benefits, demeaned applicants, allowed the government agencies to cut off benefits on the basis of questionable criteria, and involved considerable red tape, are not particularly good advertisements for this kind of system.

Accordingly, I favour a "mixed" system – one that balances the security of a government-run fund against the independence of the individual, and balances the spreading of risks and the certainty of availability of funds against the maintenance of individual responsibility for pollution and the possibility of individual deterrence.

I favour a system in which the goal of full, fast, and fair compensation is given priority and far greater weight than deterrence, but retains a mechanism for allocating the costs of the system to industrial sectors, and a mechanism for recovering the full costs of particular incidents from the specific person or persons responsible. Costs would be allocated to different industrial sectors according to the degree of risk their activities entail, and the actual loss experience associated with these activities. Guidelines as to when it is appropriate to take legal action against individual polluters would be developed, and would take into account a case-by-case basis factors such as the degree of culpability and ability to pay.

Such a system would entail a government-operated fund, levies against industry, and sweeping reform of the tort system. The system I would suggest, therefore, requires the elements discussed under the heading "Fast, Full, and Fair Compensation As the Primary Goal," in Chapter 3.

It should be possible to design a system that is fair to both victims and enterprises. This system would provide for several levels of payments from various industrial sectors into a government-run fund, while still retaining rights of individual and government civil action against specific firms under controlled circumstances. The scheme might include the following features:

- All industries might pay a very low basic levy which would not be onerous for even the smallest firm. A basic levy should be imposed even on industries that appear to have little or no pollution potential because we do not know which of the activities and substances we believe today to be harmless may prove to be hazardous in the future. Thus, payment of this basic levy would not constitute a subsidy of "dirty" actors by "clean" ones, but a form of insurance against future discovery of risks that are not presently understood.

- Industrial sectors known to be creating a higher risk might pay an additional levy that reflects this risk.

- Individual polluters within certain categories of industry might be required to pay a surcharge on the basis of their poor housekeeping, failure to comply with government standards, failure to take advantage of available technology to prevent or abate pollution, poor loss record, or record of convictions for regulatory offences. To ensure fairness to these firms, it may be necessary to establish an appeal procedure or access to judicial review on the basis of traditional considerations such as discrimination and arbitrariness, or bad faith may be a sufficient safeguard.

- Government could contribute to the fund as well. This might be done on the basis of one or more of the following contingencies: when the fund contains insufficient revenue to provide compensation to all claims against it at that time; when there is strong evidence that general economic welfare or that of specific firms or sectors will suffer unless government reduces their load; or, on principle, if it is considered "right" and "fair" that, since society benefits from having products and services that necessarily entail pollution, society should share the cost of compensation for pollution. Personally, I question this last rationale but it does have many proponents.

- If imposing the full costs of compensation on industry and/or government proves to be too great a burden, the victim could be required to absorb some of the loss through pro-rationing of the funds available or a "deductible." In my opinion, this is a last resort and should only occur when there is strong evidence that the economy cannot afford to provide full compensation. I believe that it is wrong in principle to expect the victim to absorb part of a loss he had no responsibility in creating, except in the abstract sense of being a member of an industrialized society. I also doubt whether allocating some of the loss to the victim would be necessary on economic grounds except in the most costly of mass catastrophes.

- As a residual contingency, I would suggest that notwithstanding a firm's payments into a fund, the compensation system could provide for: suits by the fund against individual actors, to recover payments made by the fund; giving the victim the option of suing the polluter directly instead of going to the fund; and/or allowing the individual to sue the polluter directly for any portion of his loss over and above the portion payable by the fund, if the fund pays less than the full amount.

Obviously, the latter contingencies would seldom arise if the fund were operating properly. Few would ever take advantage of the litigation alternative, unless law suits were to become extremely inexpensive, simple to prepare, and much less damaging for the plaintiff, who must endure anticipatory anxiety, cross-examination, and the possibility of contradiction and defeat.

As long as the fund is operating with fairness and efficiency, these latter options would appear unnecessary and merely symbolic. Moreover, one could argue that they are unrealistic alternatives to improving the fund through political pressure, recourse to the Ombudsman, and the like, and therefore might as well be abandoned. Nevertheless, I feel that the very existence of these possibilities serves as an important deterrent to a downgrading of the resources or quality of the fund and a reminder of

the need for bureaucrats to treat claimants with concern and respect.

To ensure fairness to contributors to the fund, however, and to avoid charges that the system imposes "double jeopardy" on contributors, it may be advisable to restrict the first option – the fund suing the polluter – to exceptional circumstances, which might require public debate in the legislature and its committees. Since the latter two options are unlikely to be exercised except in extraordinary circumstances, it is probably unnecessary to restrict them to ensure fairness to polluters. However, other factors such as the appearance of fairness, claims by industry that these options will result in unfairness, the possibility that industry will hold out any isolated example of abuse as the norm, and pressure from powerful interest groups against these options, may indicate restricting these mechanisms to narrow circumstances.

In response to a draft of this study, the author has received additional suggestions for incorporating individual deterrence into this system. One commentator has suggested that once the onus of proving causation were lifted from the victim and he was compensated out of the fund, causation could be established as among the firms in the industry or industries involved in production, handling, transportation, and storage of the contaminant causing the injury. It might be possible to devise a system that would give "clean" firms in the industry an incentive to prove who the actual polluter is, in order to reduce their own levy to the compensation fund and shift the costs of pollution to the polluting firms. The commentator suggests that such a system might have the advantage of giving the role of "plaintiff" or "prosecutor" to those who are best equipped in terms of financial and technical resources – other firms in the polluting industry. Variations on such a system might include methods of making a class of firms or industries jointly liable to pollution victims, subject to indemnification as among each other through settlement or litigation, but only after compensating the victim.[1]

It is possible that the kind of a mixed system I have suggested will not ultimately succeed. It is possible that, in the long-run, pollution victims would be best advised to concentrate their energies in lobbying to improve a single, highly visible fund, rather than have recourse to the courts as an alternative. It is also possible that enhanced tort liability will not prove to have much deterrence value, because industry can spread the risks widely through inexpensive insurance coverage, or because the courts interpret new statutory liabilities narrowly. It is also true that, no matter how greatly the tort system is modified, there will always be disparities between plaintiff and defendant and between co-defendants because of unequal availability of private insurance.

In time, a mixed system may prove to be merely an intermediate step on the road to a fully government-run system that eschews any attempt to provide deterrence. If that is the case, those who advocate going directly to a social assistance scheme and bypassing the in-between stage will have been right. A fully public scheme could turn out to be cheaper, more efficient, and equally accountable – if not more accountable – to its clients.

However, it appears to me that such a conclusion is premature. In any event, this study is not intended as a comparative analysis of public and mixed public and private compensation systems. It is impossible to do a direct comparison in the pollution compensation field because no fully public schemes exist. And, as I have stated before, the experience with fully public compensation schemes and social welfare schemes in other areas is far from encouraging. Therefore, the best solution that I can suggest at the present time is a mixed system. It may not be the ultimate solution to the problem of providing compensation to pollution victims, but it is bound to be a vast improvement over the present regime.

Notes

CHAPTER 1

1 For example, apple and pear trees owned by fruit farmers in Elgin County in Ontario have been injured or killed by repeated annual contamination by road salt applied to a highway by the Ministry of Transportation and Communications since 1958. After several years of requests to the Ministry to stop applying salt compound on the highway in the vicinity of their orchards and requests for compensation, several of the farmers sued the Ontario Government in 1978. The action is continuing: Action number 69518/78, County Court, Judicial District of York.

In Toronto, two families had to vacate their homes in 1979 because of persistent odours and irreparable damage caused by fuel oil spilling from a delivery truck. Six months after the spill, they were still unable to reach a settlement with their insurance company. Delays included time to receive estimates of the damage, the insurance adjuster's going on holidays, and dissatisfaction with the amount of money the insurance company offered to purchase the houses. The case was the subject of a series of articles in the *Globe and Mail*: See, for example, " 'Nothing escapes persistent odour,' say couple who suffered oil spill," *Globe and Mail*, 3 May 1979; "Spill leads to 6-month headache," *Globe and Mail*, 4 July 1979.

In Port Loring, Ontario, residents had to purchase water and have it brought to their homes for three years after the water supply in their wells was contaminated with gasoline from a leak in the underground storage tank at a service station. Their attempts to obtain compensation over this three-year period were unsuccessful, and in 1979 they were discussing commencing legal action: Legislature of Ontario Debates, number 47, third session, 31st Parliament, 15 May 1979, p. 1953.

Probably the two best-known examples of delay in obtaining compensation are the mercury pollution of the English-Wabigoon River System, which has been the subject of two books Warner Troyer, *No Safe Place*, (Toronto: Clarke, Irwin, 1977) and George Hutchison and Dick Wallace, *Grassy Narrows* (Toronto: Van Nostrand, 1977), and mercury pollution of the Lake St. Clair River, and Lake Erie. In the former case, commercial fishing was banned in 1970 because of mercury pollution of the English-Wabigoon River System, resulting in losses to natives in the Grassy Narrows and Whitedog reserves in northern Ontario. Natives recovered no substantial compensation between 1970 and 1977 when they were finally issued a writ, but lack of funds hindered the progress of the suit, which is still outstanding. In the latter case, the Ontario government sued the Dow Chemical Company when Lake Erie and Lake St. Clair fisheries were discovered to be polluted with mercury in 1970 and therefore closed to commercial fishing. Fishermen and bait dealers also sued, but did not pursue their legal remedies because of the cost and because of assurances by government that it would represent their interests in its suit. The case was settled seven years later for a small fraction of the $35 million damages originally claimed.

2 Government relief was provided through forgivable loans in the Lake Erie-St. Clair incident, mentioned in note 1 above; in the case of loss of revenue by commercial fishermen in Newfoundland as a result of phosphorous pollution of Placentia Bay in 1970, and in the case of mercury pollution of the South Saskatchewan River in Manitoba, allegedly by chlor-alkali plants in Ontario and Saskatchewan. In that case, the fishery was closed in 1970 and the Manitoba government gave 1,590 persons who were then or formerly engaged in various capacities in the commercial fishing industry in Manitoba about $2 million in assistance payments: *Interprovincial Co-Operatives Ltd. v. The Queen in Right of Manitoba* (1975), 53 D.L.R. (3d) 321, pp. 324-26.

3 When the Dow case, mentioned in note 1 above, was settled seven years after the writ was issued, examinations for discovery had not yet commenced. In the IPCO case, mentioned in note 2, p. 344, the Manitoba government sued for damages on the basis of negligence, nuisance, and trespass as well as on the basis of the statutory liability created by the *Fishermen's Assistance and Polluters' Liability Act*. When the Supreme Court of Canada held the Fishermen's Act to be *ultra vires* the Manitoba legislature insofar as it purported to have extra-territorial effects, the provincial government did not proceed with the action on the basis of its common law rights and remedies.

4 For example, in response to criticism of delays in the Dow case, in 1977, the Attorney-General of Ontario made it a point to stress in the Legislature the defendant's expenditures on pollution control equipment since the suit was launched, in the following exchange:

"Mr. Mancini: It's only taken five years.

Mr. Lewis: It is more than that – seven.

Hon. Mr. McMurtry: As I indicated there is the amount of upwards of approximately $40 million invested by the Dow Chemical Company in abatement equipment. The lawsuit has encouraged many other industries to invest money in pollution abatement equipment." (Leg. Ont. Deb. 21 November 1977, p. 2094.

CHAPTER 2

1 Christopher Arnold, "Corrective Justice," mimeo, 1980.

2 The idea of the intrinsic dignity and worth of members in society and their right to be treated with concern and respect has been suggested as the basis of civil liberties and rights and as a basic principle of the legal system by a number of writers. See, for example, Ronald Dworkin, *Taking Rights Seriously*, (Cambridge, Mass.: Harvard University Press, 1978); Joseph L. Sax, *Defending the Environment, A Strategy for Citizen Action*, (New York: Knopf, 1971), p. 19; Christopher D. Stone, *Should Trees Have Standing*, (Los Altos, Calif.: Kaufman, 1974), p. 11.

3 For a discussion of automotive no-fault insurance schemes see Jeffrey O'Connell, *Ending Insult to Injury*, (Urbana, Ill.: University of Illinois, 1975).

4 For example, the Canada Shipping Act, R.S.C. 1970, c.2 – 9, s.736; and the *Arctic Waters Pollution Prevention Act*, (1st supp.) c.2, s.8.

5 For example, *The Compensation for Victims of Crime Act, 1971*, S.O. 1971, c.51, (formerly The Law Enforcement Compensation Act, R.S.O. 1970, c.237); see also *Compensation for Victims of Crime*, report number 1, Institute of Law Research and Reform, the University of Alberta, Edmonton, Alberta, 1968.

6 For example, *The Workmen's Compensation Act*, R.S.O. 1970, c.505.

7 See for example, "The High Cost of Upholding Innocence," *Globe and Mail*, 11 September 1975.

8 For example, *The Provincial Offences Act, 1979*, S.O. 1979, c.4.

CHAPTER 3

1 Terence G. Ison, "The Politics of Reform in Personal Injury Compensation," *University of Toronto Law Journal* 27:385-402; Ison, *The Forensic Lottery*, (London: Staples Press, 1967); and Ison, "Contemporary Developments and Reform in Personal Injury Compensation," in *The Law of Torts*, Law Society of Upper Canada (Toronto: Richard DeBoo, 1973).

2 This opinion was expressed by Professor Ison in two talks he gave at Osgoode Hall Law School in the fall of 1979 and winter of 1980 in reference to the New Zealand compensation scheme.

3 Ibid.

4 This viewpoint has been expressed by C. Clifford Lax in an address delivered to the Pollution Control Association of Ontario, 3 May 1978, titled "Compensation of Victims of Pollution," and in "The Toronto Lead-Smelter Controversy" in *Ecology versus Politics in Canada*, edited by William Leiss, (Toronto: Univ. of Toronto Press, 1979). This is also the approach to compensation suggested by many industry representatives. When Ontario Minister of the Environment, Hon. Harry C. Parrott, introduced Bill 24, *An Act to Amend the Environmental Protection Act*, in 1979, he accompanied the Bill with a written statement that owners and those having control of contaminants must be legally liable for compensation for damage caused by spills because "The risk of spills, both accidental and otherwise, is inherent in their business." When hearings on this Bill were held on 18 June 1979 by the Standing Committee on Resources Development of the Ontario Legislature, several trade associations delivered briefs stating that the risks associated with toxic substances do not arise out of the activities of industry, but out of the needs of society for industry's products. See, for example, the submission of the Canadian Chemical Producers' Association, the Tank Truck Carriers' Division of the Ontario Trucking Association, the Canadian Manufacturers of Chemical Specialties Association, Canadian Pacific Limited, and the Canadian National Railway Company.

5 This view was expressed by industry representatives at a meeting of trade associations, individual firms, and conservation groups called by the Minister of the Environment on 18 June 1979 to discuss Bill 24. In particular, industry representatives expressed opposition to the idea of a voluntary, industry-administered compensation fund, because participation would be non-compulsory. They feared that responsible companies would contribute to the fund while companies which cause many of the spills would not. See, for example, submissions of A. K. Williams, Vice-President, Great Lakes Region, Canadian National Railway Company to the Resources Development Committee, 18 June 1979, p. 11: "The Railway does not consider that the creation of a private fund set up for the purpose of protecting all persons subject to liability under Bill 24 would be particularly useful or viable protection. The Railway presently is a self-insurer and would wish to retain the right to remain as such under any scheme defined by the Bill." See also the submissions of Canadian Pacific Limited, p. 4, and the Canadian Chemical Producers' Association, p. 5. But for the opposite viewpoint see "Submission of the Ontario Natural Gas Association to the Standing Resources Development Committee," R. G. Caughey, President.

6 For example, the submissions of the Canadian Environmental Law Association, August 1979, the Federation of Ontario Naturalists, 13 June 1979, and the Sierra Club of Ontario, October 1979, to the Standing Committee on Resource Development regarding Bill 24. The Canadian Nature Federation, however, in its submissions took no position on whether industry or the taxpayers should pay for compensation as long as the Bill ensured that the victims of pollution would not have to bear the cost. See also, John Z. Swaigen, "Polluter-pays policy called mere puffery," *Globe and Mail*, 7 August 1978, p. 7. The "polluter pays" or cost

internalization philosophy was also supported by twelve U.S. conservation groups in their testimony before the Subcommittee on Resource Protection of the U.S. Senate in hearings concerning the pending "Superfund" legislation; see below Chapter 5, note 72.

7 For example, the Canadian Unemployment Insurance Act, the Japanese Compensation Law and Japanese Workmen's Compensation, Ontario Workmen's Compensation, the New Zealand Personal Injury Compensation Fund, and the Unsatisfied Judgement Fund in Alberta imposed maximum limits on benefits and/or restrict the heads of damages available to less than actual losses. For example, the *Workmen's Compensation Act*, R.S.O. 1970, c.505, ss.42(5) provides that an employee who suffers permanent partial disability is entitled to a maximum award of 75 per cent of his weekly earnings during the twelve months immediately preceding his accident, including any supplement when the impairment of his earning capacity is significantly greater than is usual for the nature and degree of his injury.

8 The concerns of the trade union movement about social insurance systems in Ison, "The Politics of Reform," pp. 394-95. See also "Brief Presented to the Royal Commission on the Confidentiality of Health Records" (Ontario), Mr. Justice Horace Krever, Chairman, by E. Gerard Docquier, National Director and F. Stewart Cooke, Director, District 6, United Steel Workers of America, 20 April 1978.

9 See, for example, Julian Gresser, "The 1973 Japanese Law for Compensation of Pollution Related Health Damage," *Law in Japan* 8:115.

10 Charles A. Morrison, "Towards the Formulation of New Schemes and Strategies for the Compensation of Victims of Environmental Activities: Part II," Paper prepared for the Ontario Ministry of the Environment, August 1975, mimeo., p. 32.

11 *Rylands v. Fletcher* (1868) 3 L.R. 330 H.L.

12 See also note 4 above. Industry representatives almost uniformly expressed the opinion that third party compensation liability should be restricted to cases of negligence. See, for example, the written text of the comments of Alex Grey, President, Ontario Division, Canadian Manufacturers' Association, pp. 6-7.

13 See note 6 above. See also Donald N. Dewees, "Evaluation of Policies for Regulation Pollution," Working Paper 4, Regulation Reference, Economic Council of Canada, Ottawa, pp. 7-8.

14 The Minister of the Environment emphasized the deterrence goal to be achieved by imposing liability on persons who own or are in control of contaminants in introducing Bill 24: The objective of this legislation is to impose clear responsibility for cleanup and to enable my Ministry to take immediate control of the situation if required. This includes directing cleanup in some cases and then sorting out questions of responsibility and payment after we get the mess cleaned up.

To achieve this I want to broaden the authority of the Minister to order control, cleanup and restoration and to create liability for compensation for damage resulting from a spill which clarifies and extends the right to compensation at common law...

Those responsible will be required to restore the environment affected and will be made liable for damage. *By these means we expect to reduce the number of spills, to hasten cleanup and to reduce damage to the environment* (emphasis added).

Mr. Speaker, I believe that those who create risk should pay for restoration as a reasonable condition of doing business. (The Honourable Harry C. Parrott, D.D.S., Minister of the Environment, Statement to the Ontario Legislature on first reading of the Environmental Protection Amendment Act, 14 December 1978.

15 Dewees, "Evaluation of Policies," p. 1.

16 These various arguments were made in industry briefs to the Standing Committee on Resources Development hearings on Bill 24. A number of judicial decisions and commentators have also cited such considerations as reasons not to extend the scope of tort liability. For example, Lord Denning, M. R. in *Spartan Steel and Alloys Ltd. v. Martin and Company (Contractors) Ltd.* (1973), 1 Q.B. 27 (CA); and Allen M. Linden, *Canadian Tort Law* (Toronto: Butterworth's, 1977), p. 355.

17 The ability of industry to pass on taxes is well-documented. See for example Krzyzaniak and Musgrave, "The Shifting of the Corporate Income Tax," in *Public Policy* edited by Houghton (London: Penguin, 1964).

18 For a discussion of this principle, see for example, Victor, "Economics and the Challenge of Environmental Issues," in *Ecology versus Politics in Canada* edited by William Leiss (Toronto: University of Toronto Press, 1979); Edward J. Mishan, "The Spillover Enemy," *Encounter*, 33:3-13; Edwin A. Mills, *The Economics of Environmental Quality* (New York: Norton, 1978).

19 Ibid.

20 Dewees, "Evaluation of Policies," pp. 8-11.

21 Ronald Reid, Staff environmentalist, Federation of Ontario Naturalists, in conversation with the author, October 1979.

22 Organisation for Economic Co-operation and Development, "The Implementation of the Polluter Pays Principle," one of ten recommendations adopted on the occasion of OECD's First Meeting of the Environment Committee at Ministerial Level, 13-14 November 1974, in *Guiding Principles Concerning International Economic Aspects of Environmental Policies*, OECD, C(72)128; also OECD, *Note on the Implementation of the Polluter-Pays Principle* (Paris: OECD, 1974).

23 Several statements of the "polluter-pays policy" by Canadian federal and provincial cabinet ministers are referred to in Warner Troyer, *No Safe Place* (Toronto: Clarke, Irwin, 1977), pp. 117-18.

24 Gresser, "The 1973 Japanese Law for Compensation," p. 108; Japan, Environment Agency, *Quality of the Environment in Japan 1975*, p. 38.

25 Cited in Gresser, "The 1973 Japanese Law for Compensation," p. 116. According to Gresser:

Reports indicated that these (compensation) payments have thrown Chisso into severe financial distress. The Japanese Government however, has recently approved

a low-interest, long-term loan to Chisso to assist the company in its distress. This loan, although arguably upsetting the deterrent potential of the statute, may in fact be necessary to keep Chisso afloat.

26 See, for example, the cases cited in Chapter 1, note 1. The struggle to obtain compensation for death and permanent disablement because of Minamata disease in Japan was particularly bitter and prolonged. Because of the uncertainty and cost of using the courts, some victims engaged in "direct action" or "direct negotiation" backed by pressure tactics including picketing the plants alleged responsible and sit-ins. The outbreak of neurological disease was first reported in 1953 and the cause was established in 1959, but neither the group of victims who used the courts nor the group who engaged in direct action obtained compensation from the polluter until 1973, when a court ruled in favour of the plaintiffs: Ontario, Ministry of the Environment, *Mercury Poisoning in Iraq and Japan*, 1976. After this, the Chisso Corporation, which had been found liable by the court, settled reasonably quickly by signing an agreement with four groups of direct negotiators and reaching an arbitration settlement with other victims whose cases had been referred to a Pollution Adjustment Board.

In Niigata Prefecture, a further outbreak of an illness of the central nervous system occurred in 1969 and its cause was isolated in 1968, but the compensation problem was not solved until late in 1973: Japan, Environment Agency, *Quality of the Environment in Japan, 1973* (Tokyo: February 1975), excerpted in Shigehiro Nakashin, "Comparative Pollution Compensation Systems: A Discussion of Damage to Property and Loss of Income," Nomura Research Institute, Japan, November 1975.

Victims of severe respiratory diseases in Yokkaishi, Japan, first demanded compensation in September 1967, but did not receive a judicial decision in their favour until July 1973: Ibid.

A particularly painful disease of unknown cause given the name Itai-itai (Ouch-ouch) disease first attracted attention in Toyama, Japan, in 1955, and was identified by the Japanese government as resulting from cadmium pollution. However, government financial assistance was not forthcoming until 1968 and the company responsible for the cadmium pollution did not pay any compensation until July 1973: Japan, Environment Agency, *Quality of the Environment in Japan, 1973* (Tokyo: December, 1973), cited in Nakashin, "Comparative Pollution Compensation Systems."

In the case of fluoride pollution in Dunnville, Ontario, in the late 1960s, the possible effects of air pollution on crops and soil were first considered by the Ontario government in November 1960 and monitoring procedures were established. In 1961, area farmers reported crop damage, contamination of cistern water, and injuries to the lips and tongue allegedly as a result of fluoride-laden dust emanating from a nearby plant operated by the Electric Reduction Company of Canata Ltd. (ERCO). No compensation was paid by ERCO until 1966. However, in this case, there do not appear to have been any allegations that ERCO resisted payment; an arbitration process was used to reach agreement on payments: *Report to the Committee Appointed to Inquire into and Report upon the Pollution of Air, Soil, and Water in the Townships of Dunn, Moulton, and Sherbrooke, Haldimand County*, George Edward Hall, Chairman, Government of Ontario, September 1968.

27 Carter and McCauley, *The Sudbury Pollution Problem: Socio-Economic Background*, Environment Canada, (Ottawa: Information Canada, 1974). The figures have subsequently been criticized as inaccurate; however, the authors noted that: "These derived-damage estimates are not being put forward as the reliable cost estimates for pollution caused damage in the Sudbury area; however, we do feel that their order of magnitude is significant and accurate – the point being that an incredible amount of damage to persons, vegetation and materials is constantly going on and few people are aware of the magnitude of those pollution costs."

28 Zerbe, *The Economics of Air Pollution: A Cost-Benefit Approach*, a study conducted for the Ontario Department of Health, 1969.

29 Bates, "Estimate of the Cost of Sickness Attributable to Air Pollution in Canada," *Symposium Proceedings*, Air Pollution Control Association, 1972.

30 Stern, Wholers, Bouble and Lowry, *The Fundamentals of Air Pollution*, (New York: Academic Press, 1972).

31 United States, Department of Justice, Land and Natural Resources Division, *The Superfund Concept*, Report of the Interagency Task Force on Compensation and Liability for Releases of Hazardous Substances, Kristine L. Hall, Chairperson, June 1979, p. 7.

32 Ibid., p. 9.

33 Richard Spence, Director of Development, Regional Municipality of Peel, quoted in "Aftermath of derailment losses per day are estimated at $25 million," *Globe and Mail*, 19 November 1979. Other newspaper reports stated that lawyers estimated that damages awarded as a result of lawsuits arising out of the Mississauga derailment could reach $50 million ("Disaster lawsuit could hit $50 million," Toronto *Star*, 13 November 1979, p. A7.; that CP Rail as of 11 January 1980 had paid out $3.9 million to residents claiming out-of-pocket expenses for losses, covering about 21,000 claims ("Evacuation claims cost CP Rail $4 million," Toronto *Star*, 11 January 1980); and that on 30 January 1980 more than three hundred residents and businesses launched lawsuit against Canadian Pacific Ltd. for damages from derailment, *Globe and Mail*, 31 January 1980.

34 Dorfman and Snow, *Who Bears the Costs of Pollution Control?* (Washington: Public Interest Economics Center, 1973).

35 Arthur D. Little, "Estimation of the Frequency and Costs Associated with the Cleanup of Hazardous Materials Species," cited in U.S., *The Superfund Concept*, p. 4.

36 Hart Associates Inc., *Preliminary Assessment of Cleanup Costs for National Hazardous Waste Problem*,

prepared for the United States Environmental Protection Agency, February 1979, cited in U.S., *The Superfund Concept*, p. 4.

37 U.S., *The Superfund Concept*, p. 11.

38 Donnan, "Pollution Abatement Costs: a Drop in the Bucket?" in *Proceedings, 25th Ontario Industrial Waste Conference*, (Ontario Ministry of the Environment, 1978), pp. 40-43.

39 Lave and Seskin, *Air Pollution and Human Health* (Washington: G.P.O., 1973).

40 Study by Ben-Shaul, Brookshire, Crocker, d'Arge, Kneese and Schultz, described in United States Environmental Protection Agency press release of 29 March 1979, "Health Benefits from Stationary Air Pollution Control Appear Substantially More than Costs."

41 Data Resources Inc., *The Macroeconomic Impact of Federal Pollution Control Programs, 1978 Assessment*, commissioned by the U.S. Environmental Protection Agency and the Council on Environmental Quality (Washington, EPA, 1979).

42 Ibid. Also see Arthur D. Little, "The Economic Impact of EPA's Program," EPA, Washington, 1979 on a study of pollution control-stimulated employment, and "Environment and Economics: Fact Sheet," in *EPA Journal* 5:15.

43 *Special Session of the Group of Economic Experts, Organisation for Economic Co-operation and Development*, 1977 OECD Environment Directorate ENV/ECOSS/77.1, cited in Donnan, "Pollution Abatement Costs," p. 59. Donnan states that in the note accompanying this reference that the OECD group of economic experts further concluded that: "In the long-run, even with the limited information available, it is reasonable to suggest that net job creating or destroying effects would be small."

44 Donnan, "Pollution Abatement Costs," p. 53.

45 Data Resources Inc., *Impact of Pollution Control Programs*.

46 For example, the briefs presented to the Standing Committee on Resources of the Ontario Legislature on 18 June 1979 by the Canadian Chemical Producers' Association, p. 4 and by the Canadian Manufacturers of Chemicals Specialty Association, p. 5.

47 Donnan, "Pollution Abatement Costs," p. 60.

48 Stanford Research Institute, *Investment Outlook and Related Federal Policies for the Steel, Plastic and Paper Industries, 1976-1985*, prepared for the Office of Policy Development and Coordination, U.S. Department of Commerce, Washington, D.C. (Menlow Park: Stanford, 1977).

49 The Conference Board in Canada, *Assessing Trends in Canada's Competitive Position: The Case of Canada and the United States*, (Ottawa: Conference Board, November 1977). See also Donnan and Victor, *Alternative Policies for Pollution Abatement; the Ontario Pulp and Paper Industry, Draft for Discussion*, vol. 3, (Toronto: Ontario Ministry of the Environment, 1974), p. 47, in which the authors concluded that most pulp and paper mills in Ontario could afford to control their pollution to a much greater extent than they were doing.

50 Senator Gary Hart, "A Lawmaker's View," *EPA Journal* 5:7.

51 The United States Environmental Protection Agency maintains cumulative data on actual and threatened job losses, plant closings, and curtailment of operations in which pollution control costs are alleged by the firm to be a factor. The Administrator of the EPA maintains up-to-date records of all threatened and actual employment losses, closures, and curtailments alleged to be related to pollution control, known as the Economic Dislocation Early Warning System. The Administrator makes a quarterly report to the federal Secretary of Labour. In the second quarter of 1979, for example, EPA identified three plant closures or curtailments that resulted in the loss of thirteen jobs and two plants threatening to close involving 500 workers. Since 1971, EPA has identified 159 plants that have claimed environmental protection-related actual or threatened job losses, of which actual closings or curtailments by 135 plants have dislocated approximately 24,791 workers. Over the eight-year period from 1971 to 1979, over half the plants that threatened closings eventually resolved their compliance problems and continued operating. Actual dislocations have been concentrated in primary metals, chemicals, paper, and food processing; Letter from Douglas M. Costel, Administrator, United States Environmental Protection Agency to Honourable Ray Marshall, Secretary of Labour, dated 13 September 1979, and attachments. See, however, Donnan, "Pollution Abatement Costs," p. 40: "There have been, and there are today, factories and mills that would become, in a financial sense, uneconomic if all desired abatement objectives were met. However, many of these facilities are skating on the thin ice of insolvency for other reasons so that the removal of the environmental subsidy would finally break that ice, at it were."

52 Testimony of Alex Kennedy, Assistant General Counsel, and Paul A. E. Thompson, Assistant Counsel, Insurance Bureau of Canada, George Lightbound, Manager, United States Fidelity and Guarantee, J. W. McAllister, Manager, Auto and Casualty Department, Insurers' Advisory Organization of Canada, and R. M. Orr, Manager, Automobile and Casualty, Royal Insurance of Canada; Proceedings of Standing Committee on Resources Development of the Ontario Legislature, hearings on Bill 24, Environmental Protection Amendment Act, 1979, 29 August 1979.

53 The insurance experts were able only to give rough estimates. Although the percentage increase in existing insurance premiums was sometimes substantial, the actual dollar cost estimated appeared to be far from prohibitive. For example, in response to a question from John Lane, M.P.P., "What kind of percentage increase in the premium are we talking about?" R. M. Orr answered: "There are no statistics. There is no experience with this sort of thing. I think if any general insurer is asked by a policy holder of his

who has a general liability policy 'I want to buy this endorsement to give me the coverage it's going to provide as a result of this legislation under the *Environmental Protection Act*,' the insurer is going to have to decide what he is going to charge him.

Let me use an example, if we have a small oil and gasoline distributer insured up around Peterborough or Owen Sound or somewhere, he has a couple of small storage tanks and two or three trucks in which he delivers fuel oil around the countryside to farmers and one thing and another, and let's say we're charging him $500 for his general liability policy, if he wants this coverage we're not going to charge him $5,000 for it, I don't think; we're not going to charge him $2,500... I would say an underwriter is going to take a reasonable look at that and the measure of additional coverage he's going to give him, and he's going to charge him a percentage of the premium he's paying now. If he's paying $500, he might charge him, I don't know, $100, or he might charge him $150, maybe he would charge him $50... I can't see how any reasonable insurer could charge a gigantic premium for the additional coverage they are going to give (Proceedings of Standing Committee on Resources Development of the Ontario Legislature, 29 August 1979).

Mr. Orr also testified that a firm with approximately 200 to 300 acres of land being farmed with one dwelling and barns and insurance coverage of $100,000 to $250,000, now paying a premium of approximately $40 a year would be likely to be charged not more than $10 to $20 additional premium for the coverage of the liability, which at the time of his testimony was to be absolute, to be imposed by Bill 24.

54 Ontario, Ministry of the Environment, *Perpetual Care for Waste Management Facilities: Interim Report*, (Toronto: Ministry of the Environment, 1979), p. 11.

55 For example, Canadian Pacific Ltd. carries $51 million in insurance underwritten by several insurers, the first $4 million of which is self-insured. Therefore, the company itself would have to bear the cost of the first $4 million in successful claims: "Derailment an expensive tangle," Toronto *Star*, 20 November 1979, p. B11.

56 In Ontario in 1978, for example, even though the largest spill of a liquid substance involved approximately 572,000 barrels of crude oil from a pipeline break, no incident was of a "major" proportion, as defined in the provincial spill contingency plan. Moreover, the majority of non-liquid materials spilled were in their solid state and spills of this nature are usually easy to clean up and create a minimal environmental impact: *Annual Spill Report Summary, January to December, 1978*, Ontario Ministry of the Environment, Pollution Control Branch, Contingency Planning Section, August 1979, p. 1. However, the Contingency Planning Section, which collects this data, does not have sufficient manpower to estimate costs associated with these spills: Conversation with Garnet H. Kay, Supervisor, Contingency Planning Section. According to Dr. Henry Landis, General Counsel, Ontario Ministry of the Environment, insurance is now available in Ontario, affordable by any large company or group of smaller companies, to cover them for up to $10 million a spill to an aggregate of $20 million per year, and the largest oil spill to have any effects in Ontario as of May 1979 cost $9 million. This was a spill in the United States that affected Canadian waters: Conversation with Dr. Landis in May 1979.

57 See, for example, the case of the Chisso Corporation cited in Grasser, "The 1973 Japanese Law for Compensation."

58 *The Nuclear Liability Act* was not proclaimed for six years after it was passed in 1970 because the private insurance industry balked at providing coverage for the broad no-fault liability the Act provides for: David Estrin, John Swaigen, and Mary Anne Carswell, ed., *Environment on Trial*, 2nd ed. (Toronto: Canadian Environmental Law Research Foundation, 1977), p. 308. The reluctance of private industry in the United States to build nuclear reactors, thereby subjecting themselves to an uninsurable risk, and the reluctance of insurers in Canada and the United States to insure the full risk are also documented in J. Galiette, "The Price Anderson Act: A Constitutional Dilemma," *Environmental Affairs*, 6:567; Torrie, "Reactor Safety; Too Many Unanswered Question," *Alternatives*, Fall, 1977, p. 42; "Nuclear Power in Canada: Questions and Answers," Canadian Nuclear Association, Toronto, 1975 p. 24; Ralph Nader and John Abbotts, *The Menace of Atomic Energy* (New York: Norton, 1977) p. 27; Ian Hornby and Doris McMillan, *The Nuke Book: The Impact of Nuclear Development*, 2nd ed. (Ottawa: Pollution Probe, 1977), p. 25.

59 Estrin and Swaigen, *Environment on Trial*, p. 477; Krier, "Environmental Litigation and the Burden of Proof," in *Law and the Environment*, edited by M. Baldwin and J. Page (New York: Walker, 1970), p. 105. See also Hanks and Hanks, "An Environmental Bill of Rights: the Citizen Suit and the National Environmental Policy Act of 1969," *Rutgers Law Review* 24:265-68; Joseph Sax, *Defending the Environment* (New York: Knopf, 1971) pp. 136-57.

60 For example, the *Architects Act*, S.S. 1968, c.6, s.38; the *Canadian Criminal Code*, S.S. 58 (3;80, 133 (b)), 139 (3,173,179 (3)); the *Customs Act*, R.S.C. G 52, c.42, s.262; the *Excise Act*, R.S.C. 1952, c.60, s.122; the *Food and Drugs Act*, R.S.C. 1970, c.41, s.33(2); the *Game Act*, R.S.S. 1970, c.44, s.83; the *Government Liquor Control Act*, S.A. 1924, c.14, s.129; the *Liquor Act*, R.S.S. 1930, c.232, s.116(3); the *Narcotic Control Act*, S.C. 1960-61, c.35, s.8; the *Oil and Gas Production and Conservation Act*, R.S.C. 1970, c.48, s.52; the *Pesticide Residue Compensation Act*, R.S.C. 1970, c.34, s.2; the *Vehicles Act*, R.S.S. 1965, c.377, s.133(10).

61 MacKenna, "The Compellability of the Accused and Reverse Onus Statutes," in *Some Civil Liberties Issues of the Seventies*, edited by W. S. Tarnopolsky (Toronto: Osgoode Hall Law School, 1975); Levy, "Reverse Onus Clauses in Canadian Criminal Law; An Overview," *Saskatchewan Law Review* 35:40; Welling,

"The Bill of Rights and Statutory Presumptions of Non-Innocence," *Western Ontario Law Review* 12:229.

62 For example, submissions of United Co-operatives of Ontario, 28 June 1979, and submissions of David E. Toye, on behalf of the Canadian Manufacturers' Association, 17 May 1979, to the Standing Committee on Resources Development of the Ontario Legislature.

63 *Oil Spill Prevention and Pollution Control Act*, c.70-244, s.6, 1970 FLA. Laws, 740.

64 This situation is described in Barrett and Warren, "History of Florida Oil Spill Legislation," *Florida State University Law Review* 5:314-18.

65 Ibid., p. 319.

66 "Senate Approves Clean-Up Bill for Toxic Wastes," *Wall Street Journal*, 25 November 1980, p. 14.

CHAPTER 4

1 *St. Helens Smelting Company c. Tipping* (1865), 11 H.L.C. 642.

2 *McKinnon Industries Ltd. v. Walker*, [1951] 3 D.L.R. 577.

3 *Mihalchuk v. Ratke* (1966) 55 W.W.R. 555.

4 *Andreae v. Selfridge* (1938), 1 c.1.

5 *Haddon v. Lynch*, [1911] V.L.R. 230.

6 *Christie v. Davey*, [1893] 1 c.316.

7 *Hollywood Silver Fox Farm Ltd. v. Emmett*, [1936] 1 A.L.L. E.R. 825.

8 *Bottom v. Ontario Leaf Tobacco Company*, [1935] O.R. 205 (Ontario C.A.)

9 *Canada Paper Company v. A. J. Brown*, [1922] 63 S.C.R. 752.

10 *Grosvenor Hotel Company v. Hamilton* (1894), 2 Q.B. 836 at 841.

11 *Andreae v. Selfridge*, (1938), 1 c.1.

12 Ibid.

13 *Savage v. McKenzie* (1961) 25 D.L.R. (2d) 175.

14 For cases of nuisance caused by a "stranger," see R.F.V. Heuston, ed., *Salmond on Torts*, 14th ed. (London: Sweet and Maxwell, 1965), p. 106.

15 *McKinnon Industries Ltd. v. Walker*, [1951] 3 D.L.R. 577.

16 *Huston v. Lloyd Refineries* [1937] O.W.N. 53.

17 See for example, *Levinsohn v. Greenwin Construction Company*, discussed in the Canadian Environmental Law Association *Newsletter* 1:23.

18 *Fillion v. New Brunswick International Paper Co.* (1934) 3 D.L.R. 22; *Hickey v. Electric Reduction Company of Canada Ltd.* (1972) 21 D.L.R. (3d) 368.

19 Rylands v. Fletcher (1868) 3L.R. 330 H.L.

20 Linden states that a Canadian court may treat a breach of statute as some evidence of negligence, as *prima facie* evidence of negligence, as shifting the onus of proof, as negligence *per se*, or as a basis for creating new tort duties: Allen M. Linden *Canadian Negligence Law* (Toronto: Butterworths, 1972) p. 108.

21 *Sterling Trusts Corp. v. Postma and Little* [1965] S.C.R. 324 (SCC).

22 *Ostash v. Sonnenberg* (1968), 67 D.L.R. (2d) 311 (Alta., C.A.).

23 *Suzuki v. Ionian Leader* (1950), Exch. C.R. 427.

24 For example, in an action to enforce an easement to light in England, the Court of Appeal upheld the trial judge's finding that contemporary man requires more light, due to improvements in building design and artificial lighting, than his forebears. Lord Denning, M. R., in a judgment with which two other justices agreed, stated "I think the trial judge was entitled to have regard to the higher standards expected for comfort as the years go by": *Ough v. King* (1967) 1 W.L.R. 1547 at 1533.

25 Criticisms of the tort system are abundant. See, for example, Terence G. Ison, *The Forensic Lottery* (London: Staples Press, 1967); and Ison, "Contemporary Developments and Reform in Personal Injury Compensation." *The Law of Torts*, Law Society of Upper Canada (Toronto: Richard DeBoo, 1973); David Estrin, John Swaigen, and Mary Anne Carswell, eds., *Environment on Trial*, 2nd ed. (Toronto: Canadian Environmental Law Research Foundation, 1977), p. 412; and Jeffrey O'Connell, *Ending Insult to Injury*, Urbana, Ill.: Univ. of Illinois, 1975. Environmentalists have concentrated their criticisms of the tort system on the fact that it is primarily an after-the-fact strategy rather than a preventive tool (for example, C. Clifford Lax, "Compensation of Victims of Pollution," address to the Pollution Control Association of Ontario, 3 May 1978, and on the fact that courts focus on narrow issues involving the proprietary and financial interests of parties rather than on the broader ecological concerns.

26 P. S. Atiyah, *Accidents, Compensation and the Law* (London: Weidenfeld and Nicholson, 1975), p. 456.

27 However, the validity of Atiyah's assertion has been questioned. In a letter commenting on a draft of this paper, Paul A. E. Thompson, Assistant Counsel to the Insurance Bureau of Canada states, "Canadian general insurance companies do virtually no advertising, and from my exposure to other western countries, I have not seen any evidence of different practices there."

28 Ibid., pp. 278-79. Atiyah describes the findings of a number of studies verifying this. Also studies cited in Linden, *Canadian Negligence Law*, pp. 451-53.

29 *M'Allister (or Donoghue) v. Stevenson* [1932] A.C. 562.

30 In *Pugliese v. National Capital Commission* (1978) 17 O.R. (2d) 129, the Ontario Court of Appeal overruled the long-standing rule that interference with groundwater is not actionable. The Court ruled that pumping of groundwater that causes subsidence of neighbouring lands resulting in injury to buildings may amount to negligence or nuisance. The Supreme Court of Canada upheld the decision on the grounds that the Ontario Water Resources Act creates a duty of non-interference with groundwater whose breach may result in civil

liability: *National Capital Commission v. Pugliese*, (1979) 8 C.E.L.R. 68 (S.C.C.).

31 For example, in *Bolton v. Stone* [1951] A.C. 850, where a woman standing on a public street near a cricket field was struck on the head by a cricket ball and injured, the trial judge held that the defendants, who were members of the cricket club, were not guilty of nuisance or negligence, but the Court of Appeal in a divided decision found in favour of the plaintiff. The Cricket Clubs of England then supported the defendants' appeal to the House of Lords, where the defendants were successful: Epstein, "A Theory of Strict Liability," Journal of Legal Studies 2:170-71. In C. Clifford Lax, "The Toronto Lead-Smelter Controversy," cited in *Ecology versus Politics in Canada*, edited by William Leiss (Toronto: Univ. of Toronto Press, 1979), Lax describes the reaction of the lead-smelting industry to pressure from municipal politicians, environmental groups, and local residents to force two lead smelters in Toronto to curtail emissions suspected of exposing children to high levels of lead contamination: "The two lead-smelters joined together in a common front against the mounting pressure. They retained the same law firm, public relations firm, and consulting engineers to assist them. There was the clear concern that, if they were forced to adopt radical and expensive pollution abatement measures in Toronto, their industry would be faced with similar demands in other parts of Canada and the United States...

Experts were retained and brought to Toronto to testify before the Local Board of Health, stating that air-borne lead posed no health hazard and that we need only be concerned with lead that was ingested rather than inhaled. Lurking in the background were the officials of the industry association, the International Lead Zinc Research Organization (ILZRO). This trade spokesman had, for a number of years, developed its own expertise in public health matters related to lead contamination. It maintained an expensive coterie of prominant scientists whose research was in whole or in part funded by ILZRO. These scientists were sent to testify in Toronto on numerous occasions.

32 For example, the *Ontario Water Resources Act*, s.32(5) gave both municipal and industrial sewage works statutory authority to discharge contaminants following a series of succesful riparian rights cases against polluting sewage treatment plants in Ontario; see also *The Industrial Mining Lands Compensation Act*, R.S.O. 1970, c.219, s.4; *The Damage by Fumes Arbitration Act*, P.S.O. 1960, c.86 (repealed by S.O. 1970 c.103).

33 Following an injunction and damages awarded to a downstream tourist operator and several other riparian owners against the operator of a pulp and paper mill, which was upheld by the Ontario Court of Appeal, the Ontario Legislature substantially amended the *Lakes and Rivers Improvement Act* in an attempt to require the Supreme Court of Canada to take into account the effect of the remedy on the local economy: *McKie v. The KVP Co.*, [1948] O.R. 398 (Ont. H.C.); [1948] 1 D.L.R. 39 (Ont. C.A.); *The Lakes and Rivers Improvement Act*, S.O. 1949, c.48, s.6. When this failed, the Legislature passed a statute allowing the plaintiffs their damages but dissolving the injunction: *The KVP Co. Ltd. Act*, S.O. 1950, c.33.

34 For example, Terence G. Ison, "The Politics of Reform in Personal Injury Compensation," *University of Toronto Law Journal* 27:385-402; and Lax, "The Toronto Lead-Smelter Controversy."

35 Atiyah, *Accidents, Compenstion and the Law*, p. 116.

36 For example, *Harcourt v. Jamieson*, [1973] F.C. 1181; (1973) 2 C.E.L.N. 150; (F.Ct. Trial Div.) *Colquhoun v. Kitchen*, Ont. H. Ct., Morden J., unreported. See (1974) 3 C.E.L.N. 214.

37 *Buckland v. Watts* (1970), 1 Q.B. 27 (C.A.).

38 Bouck and Roberts, "A proposal for the Reform of the British Columbia Supreme Court Rule 1961," 1972, pp. 59-60. The report suggests that in a hypothetical case in which the plaintiff recovers $5,000 after a two-day trial, the client would have to pay his lawyer $1,800 and would recover from the defendant approximately $750.

39 *The Income Tax Act*, R.S.C. 1970, c.148, ss.11 and 12(i)(a).

40 For example, *Friesen v. Forest Protection Ltd.* (1978), 22 N.B.R. (2d)146; (1978), 7 C.E.L.R. 125. The plaintiff was awarded $1,328.20 in damages against the defendant, which sprayed his property with a pesticide. However, his legal fees greatly exceeded this amount: Conversation with Roger Cotton, a law student who assisted a citizens' group organized to oppose the spraying of the pesticide, fenitrothion, which is believed by some to be harmful to human health. In the lawsuit by the Ontario Government against the Dow Chemical Co., (see George Hutchinson and Dick Wallace, *Grassy Nurrows* (Toronto: Van Nostrand, 1977), between 1970 and 1978, the government spent $120,988 in legal fees and payments to consultants and technical personnel outside the government. The Ministry of the Attorney General has stated that it is not possible to estimate the cost of the time of government personnel involved in this case: Response of the Ministry of the Attorney General to question 100 tabled 8 June 1978 by Robert Nixon, M.P.P. and question 103 tabled 13 June 1978 by Marion Bryden, M.P.P. See also the answer by the Treasurer to question number 54 by Mrs. Bryden, Legislature of Ontario Debates, 16 December 1977. The case was settled in June 1978 for $150,000 payable to the government for research into water pollution and $250,000 for fishermen who lost their livelihood. In addition to the government's expenses, the fishermen hired lawyers and incurred legal fees and disbursements. No estimate of these costs is available.

41 This problem is referred to in McDougall, "The Churchill Diversion: An Examination of its Implications with respect to the Development of Legal Framework for the Management of Canadian Water Resources," Environment Canada, Ottawa, September 1972, reprinted in part in McDougall, "Resources Regulation

and Development," materials prepared for classroom use at Osgoode Hall Law School, 1979-80, pp. 2-3.

42 *The Power Corporation Act* (formerly *The Power Commission Act*) R.S.O. 1970, c.354, ss.7(5), 7(6), 24(5), 32(3); *Ontario Water Resources Act*, s.32(5).

43 *Fillion v. New Brunswick International Paper Co.* (1934), 3 D.L.R. 22; *Hickey v. Electrical Reduction Company of Canada Ltd.* (1972), 21 D.L.R. (3rd) 368.

44 *Suzuki v. Ionian Leader* (1950), Exch. C.R. 427.

45 *Workmen's Compensation Act*, R.S.O. 1970, c.505, s.42(5).

46 *Lynch v. Knight* (1861), 9 H.L. Cas. 577; *Penman v. Winnipeg Electric Rwy.*, [1925] 1 D.L.R. 497 (Man.).

47 *Horne v. New Glasgow*, [1954] 1 D.L.R. 832 (NS) is one of the very few cases where nervous shock was neither precipitated by a physical injury nor manifested itself in a physical injury. The British and Canadian cases are reviewed in Allen M. Linden, *Canadian Tort Law* (Toronto: Butterworth's, 1977), p. 355, and in *The Law of Torts*, Law Society of Upper Canada, (Toronto: Richard DeBoo, 1973).

48 Linden, *Canadian Tort Law*, p. 355.

49 See for example, *Gendron v. Town of Dalhousie* (1977), 18 N.B.R. (2d) 61. The Ontario Shade Tree Council, has published "Evaluating Trees in our Environment in the Province of Ontario," presents a formula for evaluating injury to trees that takes into account a matrix of variables, but it has not yet been used in the courts, or if it has, its use has not been referred to in any reported decision.

50 The argument that interruption of a view should be treated like any other nuisance is made in Silverstone, "Visual Pollution: Unaesthetic Use of Land as Nuisance," *Alberta Law Review* 12:546.

51 *McBean v. Wyllie* (1902), 15 Man. L.R. 135 (K.B.). See also *Morris v. Dominion Foundries Ltd.* (1947), 2 D.L.R. 840 (Ont. H.C.).

52 *Walker v. Pioneer Construction Co. (1967) Ltd.* (1975), 8 O.R. (2d) 35 (Ont. H.C.): *Muirhead v. the Timbers Brothers Sand and Gravel Ltd.* et al., Supreme Court of Ontario, Rutherford, J. 19 July 1977, unreported.

53 *Hall v. Evans* (1877), 43 U.C.Q.B. 190.

54 See now *The Limitations Act*, R.S.O. 1970, c.246, s.33.

55 Heuston, *Salmond on Torts*, p. 90.

56 *Re Simpson and Ontario Hydro* (1979), 8 C.E.L.R. 135.

57 Heuston, *Salmond on Torts*.

58 The cases are reviewed in Allen M. Linden, *Canadian Tort Law*, p. 367, and in Solomo and Feldhusen, "Recovery for Pure Economic Loss: The Exclusionary Rule," in *Studies in Canadian Tort Law*, edited by Allan M. Linden (Toronto: Butterworths, 1968).

59 The *per quod* action. See, for example, *Mankin v. Scala Theodrome Ltd.*, [1946] 1 K.B. 257; *Inland Revenue Commissioners v. Hambrook*, [1956] 2 Q.B. 641.

60 Linden, *Canadian Tort Law*, p. 367.

61 For example *Seaway Hotels Ltd. v. Gragg (Canada) Ltd.* [1959] O.R. 581, 21 D.L.R. (2d) 264 (CA).

62 *Rivtow Marine Ltd. v. Washington Iron Works* [1974] S.C.R. 1189.

63 *Spartan Steel & Alloys Ltd. v. Martin & Co.* [1972] 3 A.L.L. E.R. 557 (CA), per Edmund Davies LJ.

64 *SCM(UK) Ltd. v. W. J. Whittal & Son Ltd.*, [1970] 3 A.L.L. E.R. 245 at 248 and 250.

65 *Mayne and McGregor on Damages*, 12th ed. (London: Sweet and Maxwell, 1961) p. 743.

66 *Gendron v. Town of Dalhousie* (1977), 18 N.B.R. (2d) 61.

67 Ibid.

68 For example, the *Assessment Act*, R.S.O. 1970 c.32 authorizes the assessment of property taxes on land in accordance with its market value, which would be affected by proximity to sources of pollution. A landowner who believes this property has been assessed at too high a value may appeal to a special court set up under *The Assessment Review Court Act*, S.O. 1972, c.111, as amended by S.O. 1973, c.107.

69 *Mayne and McGregor on Damages*, p. 749.

70 Hasson, "Cases and Materials on Canadian Personal Income Security, 1979-80," prepared for the exclusive use of students at Osgoode Hall Law School, pp. 1-23.

71 *Andrews v. Grand and Toy Alberta Ltd.* (1978), 83-D.L.R. 452 at 457.

72 Ibid., per Dickson, J., pp. 457-59.

73 *Preston v. Hilton* (1920), 48 O.L.R. 172, 55 D.L.R. 647 (Ont. H.Ct.); *Turtle v. Toronto* (1924), 56 O.L.R. 252 (C.A.); *St. Lawrence Rendering Co. v. Cornwall*, [1951] O.R. 664.

74 Many of these factors existed in the case of the Indians of Whitedog and Grassy Narrows reserves, referred to in Chapter 1, note 1. Many observers have felt that the mercury pollution and consequential loss of employment may have been a contributing factor to alchoholism, violence, child abuse, and gasoline sniffing on these reserves. The social disintegration may also have been a factor in delaying the institution of any legal action for compensation until 1977. The fact that many of the natives on these reserves spoke only Ojibway and many were illiterate, requiring lawyers to hire people on the reserves to explain the nature of a legal retainer and arrange for the signing of retainers, may also have prolonged the time involved in issuing a writ.

75 *Reeves v. Butcher*, [1891] 2 Q.B. 509. See also *Pegler v. Railway Executive* [1948] A.C. 332.

76 *Bradford Old Bank Ltd. v. Sutcliffe*, (1918) 2 K.B. 833, 88 L.J.K.B. 85; *Lewington v. Raycroft*, [1935] O.R. 440 at 442.

77 *Long v. Western Propeller Co.* (1975), 63 W.W.R. 146; *Lemesurier v. Union Gas Co.* (1975), 8 O.R. (2d) 152.

78 *Cartledge v. Jopling and Sons*, (1963) A.C. 758.

79 See for example, *The Limitations Act*, R.S.O. 1970, c.246, s.28 which provides for an extension of time or postponement of the limitation period in certain cases of fraudulent concealment.

80 *Bracken v. Caledon*, [1945] O.W.N. 6 [1945] 1 D.L.R. 465. Affirmed [1945] O.W.N. 550, 4 D.L.R. 370 (C.A.).

81 For example, Ontario, Dept. of the *Attorney General Law Reform Commission Report on Limitation of Actions*, 1969; British Columbia, Dept. of the Attorney General, Law Reform Commission *Report on Limitation*, Part Two, 1974; and United Kingdom, Scottish Law Commission *Memorandum no. 9, Prescription and Limitation of Action*. The recommendations of the Scottish Law Commission and the New South Wales Reform Commission and the Alberta members of the Conference of Commissioners on Uniformity are discussed in the Ontario Report, pp. 107-09

82 *Cartledge v. Jopling and Sons*, (1963) A.C. 758.

83 *Report of the Committee on the Limitation of Actions* (The Tucker Committee), 1949, C.M.D. 7740.

84 *Pickles v. National Coal Board*, [1968] 2 A.L.L. E.R. 598; the Court of Appeal also commented on difficult wording of the Act in *Goodchild v. Greatness Timber*, [1968] 2 A.L.L. E.R. 255.

85 British Columbia, Dept. of the Attorney General, Law Reform Commission, *Report on Limitation*, Part Two, 1974, pp. 71-76; also Linden, *Canadian Tort Law*, p. 599.

86 Ibid.

87 Interviews with Stan Griffin, Statistics Department, and Paul A. E. Thompson, Assistant Counsel, Insurance Bureau of Canada.

88 Vance, *Handbook on the Law of Insurance*, 3rd ed. (St. Paul, Minn: West Publishing Co., 1951); Baer, Rendall, and Snow, *Cases on the Canadian Law of Insurance*, 2d ed. (Toronto: The Carswell Co. Ltd., 1978).

89 For example, the *Canadian and British Insurance Companies Act* R.S.C. 1970, c.I-15; the *Foreign Insurance Companies Act* R.S.C. 1970, c.I-16; the *Department of Insurance Act* R.S.C. 1970, c.I-17; *The Insurance Act* R.S.O. 1970, c.224.

90 Interview with Stan Griffin, Statistics Department, Insurance Bureau of Canada.

91 Interviews with Stan Griffin and Paul Thompson of the Insurance Bureau of Canada.

92 See, for example, the case of the two families who vacated their homes after oil spilling from a delivery truck made them uninhabitable: " 'Nothing escapes persistent odour,' say couple who suffered oil spill," *Globe and Mail*, 3 May 1979; "Spill leads to 6-month headache," *Globe and Mail*, 4 July 1979.

93 Henderson, Saunders and McLaren, *Materials on Accident Compensation and the Law*, vol. 1 (Faculty of Law, University of Calgary, 1979-80) pp. 2-53.

94 Ibid., pp. 2-64.

95 "Insurers rebuked over parsimony," *Globe and Mail*, 1 February 1980; "Insurance issue a legal thicket: Anger still hanging in Mississauga air," *Globe and Mail*, 4 February 1980.

96 Laurence Welsh, "CPR brings in host of adjusters to process Mississauga claims," *Globe and Mail*, 14 November 1979, p. B2.

97 The following discussion of conventional third party liability insurance and Environmental Impairment Insurance is based primarily on three sources: Geoffrey E. G. Scott, "Environmental Impairment Insurance," unpublished; H. Clarkson (Overseas) Ltd., "Insuring Pollution Liability: A Practical Solution," unpaginated promotional brochure for Environmental Impairment Insurance; and the testimony of Peter Armour, an independent insurance consultant, before the Ontario Environmental Appeal Board on an appeal by two companies against a decision of the Ministry of the Environment to refuse to issue a licence for waste disposal in Maple, Ontario: Ontario, Environmental Appeal Board, *Transcripts*, vol. 20, 20 September 1979.

98 Conversation with Dr. Henry Landis, General Counsel, Ontario Ministry of the Environment.

99 H. Clarkson (Overseas) Ltd., "Insuring Pollution Liability."

100 Ibid.

101 Charles A. Morrison, "Towards the Formulation of New Schemes and Strategies for the Compensation of Victims of Environmental Activities: Part II," paper prepared for the Ontario Ministry of the Environment, August 1975, mimeo., p. 32.

102 For example, *The Environmental Protection Act*, S.O. 1971, c.86, s.14; *The Pollution Control Act*, S.B.C. 1967, c.34; the *Clean Environment Act*, S.M. 1972, c.130; *The Environmental Quality Act*, S.Q. 1972, c.49; *The Environmental Protection Act*, S.N.S. 1973, c.6, s.23(2); *The Ontario Water Resources Act*, R.S.O. 1970, c.332, s.32(1); *The Fisheries Act*, R.S.C. 1970, c.F-14, s.33(2). The pollution prohibitions actually fall into two classes, those like the *Fisheries Act*, *The Ontario Environmental Protection Act*, and *The Ontario Water Resources Act* which prohibit all substantial, harmful pollution but provide for the creation of exceptions through permits or setting of standards, and those like the British Columbia *Pollution Control Act* and the Manitoba *Clean Environment Act*, which prohibit all pollution in excess of limits prescribed by the government or in the absence of a permit. In practice, it is questionable whether the difference in wording is significant, as those jurisdictions that purport to prohibit all pollution frequently authorize pollution through permits and standards.

103 Interview with Robert Collings, Consumer Liaison Officer, Insurance Bureau of Canada, 22 August 1979.

104 Testimony of Peter Armour, before the Ontario Environmental Appeal Board in the matter of an appeal by Superior Sand, Gravel and Supplies Ltd. and Crawford Allied Industries Ltd. from the refusal of the Director of Environmental Approvals, Ministry of the Environment, to issue certificates of approval for two waste disposal sites supposed to be located on lots 22 to 28, Concession III, village of Maple, Town of Vaughan, Regional Minicipality of York: *Transcripts*,

vol. 20, 20 September 1979, p. 3,989. The one-year cancellation period described by Mr. Armour was in respect to a group policy for professional liability coverage issued to the Law Society of Upper Canada.

105 Ibid., p. 3,991.

106 Form EIL, U.K. 474 s.1.

107 Testimony of George Lightbound, Manager, United States Fidelity and Guarantee, before the Standing Resources Development Committee on Bill 24, the Environmental Protection Amendment Act, 1979, 29 August 1979, morning sitting.

108 Testimony of Peter Armour, before the Ontario Environmental Appeal Board, *Transcripts*, pp. 3,978-80. The following exchange between John Lane, M.P.P., and George Lightbound at the 29 August 1979 sitting of the Standing Resources Development Committee illustrates the difference in opinion as to how effective third party liability insurance is as a remedy for loss:

Mr. Lane: I have been involved in the insurance industry for thirty years... Looking at claims I have been involved in over the years on general liability policies, there has been a damn low percentage of payments paid out.

If I have a policy and somebody says I'm liable for something, I simply advise him I'm insured. If he doesn't see fit to spend the necessary dollars to go to court and sue me, then of course there is no payment made on my account because he hasn't proved I am liable. So basically general liability policies haven't paid a very high percentage of claims over the years. I think you'll both agree with that.

Mr. Lighbound: If you look at the statistics, we've developed a pretty good loss ratio on general liability insurance.

Mr. Lane: Well, your company maybe has.

Mr. Lightbound: No, no, I'm talking about the industry. The industry publishes statistics as to how much it pays out in claims and the dollars it takes in... If you look at those, you'll see we are paying out upwards of seventy per cent in losses under general liability.

Mr. Lane: Again, over the years people would come in with an insurance policy and ask me what it covers. I would say, "Read the exclusions and what's not excluded is included." After they read the exclusions, they ask, "What the hell is covered?"

109 Testimony of Peter Armour, before the Ontario Environmental Appeal Board, *Transcripts*, p. 3,980.

CHAPTER 5

1 The voluntary industry schemes are Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP), an agreement by many of the world's tanker owners to provide compensation to governments that incur cleanup expenses, and Contract Regarding Interim Supplement Tanker Liability for Oil Pollution (CRISTAL), a similar scheme for owners of shipping cargo. TOVALOR is described in *International Legal Matters* 8:497; CRISTAL is described in *International Legal Matters* 9:45; and, both are discussed in Doud, "Compensation for Oil Pollution Damage – Further Comments on the Civil Liability and Compensation Fund Conventions," *Journal of Maritime Law and Commerce* 4:525. The foreign statutes include: the *British Merchant Shipping (Oil Pollution) Act 1971* and the *British Merchant Shipping Act 1974* designed to implement two international conventions, described in Cusine, "Liability for Oil Pollution under the Merchant Shipping (Oil Pollution) Act 1971," *Journal of Commerce*, 10:105, and Byers, "Civil Liability for Oil Pollution at Sea," *Journal of Planning and Environmental Law*, 1979, p. 5.

See also, the *Oil Spill Prevention and Pollution Control Act*, c.10-244, s.6, 1970 Fla. Laws, 740, described in Barrett and Warren, "History of Florida Oil Spill Legislation, *Florida State University Law Review* 5:314-18, and in Roady, "Remedies in Admiralty for Oil Pollution," *Florida State University Law Review* 5:361; the *Trans-Alaska Pipeline Act*, 43 U.S.C. 1651-1655 SUPP.V. 1975) and the *Deepwater Port Act of 1974*, 33 U.S.C. 1501-1524; 43 U.S.C. 1333 (SUPP.V. 1975), also described in Roady, "Remedies in Admiralty," above; and the U.S. federal *Water Quality Improvement Act of 1970*, 84 Stat. 91 as amended, 33 U.S.C. 1321 (SUPP.V. 1975 (formerly 33 U.S.C. 1161 (1970), which makes owners and operators of vessels discharging oil liable to the U.S. federal government for up to the lesser of $14 million or $100 per gross ton in cleanup costs or for unlimited liability if the government can prove willful negligence or willful misconduct, described in Sisson, "Oil Pollution and the Limitation of Liability Act: A Murky Sea for Claimants Against Vessels," *Journal of Maritime Law and Commerce* 9:285.

2 The international agreements include the Convention on Civil Liability for Oil Pollution Damage signed at Brussels in November 1969, and the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Brussels, December 1971, described in Doud, "Compensation for Oil Pollution Damage," and in Hunter, "The Proposed International Compensation Fund for Oil Pollution Damage," *Journal of Maritime Law and Commerce* 4:117.

3 See for example, *R. v. Canada Steamship Lines*, (1960) O.W.N. 227; 127 ccc 205 (Ont. Cty. Ct.).

4 *Interprovincial Co-operatives Ltd. et al. v. The Queen in Right of Manitoba* (1974), 53 D.L.R. (3d) 321. The issue in this case was whether a province receiving harm from a discharge of a contaminant in another province could pass legislation affecting the right to compensation of its residents from the sources of contamination in the initiating province. With respect to intraprovincial pollution, all seven Justices agreed, *obiter*, that compensation legislation would be within provincial jurisdiction. Per Laskin, C.J.C. at 355, per Ritchie J. at 346, and per Pigeon at 359.

5 Ibid.

6 Ibid., per Beetz, Pigeon, Martland, and Ritchie JJ.

7 Ibid., per Laskin CJC, Spence, and Judson JJ.

8 Bill C-17, 1978 (30th Parl. 4th Sess., the *Transportation of Dangerous Goods Act*, was given first reading in the House of Commons by the Liberal government on 9 November 1970. It died on the order paper when an election was called. Bill C-25, 1979 (31st Parl. 1st Sess.), also entitled the *Transportation of Dangerous Goods Act*, was given first reading on 19 November 1979. It too died on the order paper when an election was called. Neither Bill provided for third-party compensation.

9 *The Nuclear Liability Act*, R.S.C. 1970, c.29 (1st Supp.). Proclaimed in force 11 October 1976, by SI/76-165.

10 Letter from H.J.M. Spence, Chief, Office of Public Information, Atomic Energy Control Board, to the author, 24 March 1980.

11 It is possible to claim damages within three years of the victim's becoming aware of the injury, and there is an overall time limitation of ten years "from the date the cause of action arose," but some radiation-caused illnesses take twenty years or more to become apparent. Moreover, radiation may cause gene mutation, which is discovered only upon the birth of a child or years after a child is born. See David Estrin, John Swaigen, and Mary Anne Carswell, eds., *Environment on Trial*, 2nd ed. (Toronto: Canadian Environmental Law Research Foundation, 1977), p. 309.

12 The $14 billion figure comes from a review by the U.S. Environmental Protection Agency of the reactor safety by a group headed by Dr. N. C. Rasmussen. The various reports on nuclear safety and their associated risks are discussed in Olson, *Unacceptable Risk* (New York: Bantam Books, 1976). The EPA report indicated that the worst possible nuclear accident would result in 3,300 early deaths, 45,000 cases of cancer, 5,100 genetic defects, and $14 billion in property damage (Olson, *Unacceptable Risk*, p. 23).

13 The *Price-Anderson Act*, Pub. Law 85-256, 71 Stat. 576, enacted as an amendment to the U.S. *Atomic Energy Act* of 1954.

14 Interview with J.F.D. MacIsaac, Legal Advisor, Atomic Energy Control Board of Canada, Fall 1975, referred to in Estrin, Swaigen, and Carswell, *Environment on Trial*, p. 309, note 119.

15 *Pesticide Residue Compensation Act*, R.R.C. 1970 c.P11. *Pesticide Residue Compensation Regulations*, SOR/72-9.

16 Letter from J. F. Standish, Associate Director, Feeds and Fertilizers, Food Production and Inspection Branch, Agriculture Canada, to the author, 8 April 1980.

17 *Canada Shipping Act*, R.S.C. 1970, c.S-9, ss.734-751.

18 See the Maritime Pollution Claims Fund Annual Reports for 1974-75, 1976-77, 1977-78, and 1978-79.

19 "Summary of evidence of L. E. Audette, Administrator, Maritime Pollution Claims Fund, before the West Coast Oil Ports Inquiry," Dr. Andrew R. Thompson, Commissioner, 31 August 1977, p. 3.

20 Charles A. Morrison, "Towards the Formulation of New Schemes and Strategies for the Compensation of Victims of Environmental Activities: Part II," paper prepared for the Ontario Ministry of the Environment, August 1975, mimeo., p. 54.

21 "Evidence of L. E. Audette...," p. 7.

22 For example, the ships "Golden Robin" and "Island Spruce" were grounded in September 1974, resulting in four lawsuits related to oil pollution in the former case, for which the Administrator of the Fund would be liable to pay the amount of any judgment if the defendant, the owner of the ship, failed to make payment, and resulting in the latter case in a suit by the Crown to recover its expenses in removing diesel oil from the grounded ship to prevent pollution. The Administrator would be responsible for paying the Crown's claim in the event of successful litigation, as the owner of the ship did not appear to have any insurance or apparent assets. Both cases were still before the courts as of 31 March 1979. See Maritime Pollution Claims Fund Annual Reports 1977-78 and 1978-79.

23 *Amendments to Fisheries Act*, S.C. 1976-77, c.35.

24 *Fisheries Act*, R.S.C. 1970, c.F-14.

25 *Suzuki v. Ionian Leader* (1950), Exch. c.r. 427.

26 *Cartledge v. Jopling*, (1963) A.C. 758.

27 *Arctic Waters Pollution Prevention Act*, R.S.C. 1970 c.2 (1st Supp.).

28 *Arctic Waters Pollution Prevention Regulation*, S.O.R. 72-253, as amended by 76-497, 76-757.

29 Ibid.

30 *Air Pollution Control Act*, S.O. 1967, c.2 as amended by S.O. 1968 c.3, S.O. 1969, c.2, s.11.

31 *Environmental Protection Act*, S.O. 1971, c.86.

32 Interviews with Dr. Ralph Linzon, Director, Phytotoxicology Branch, Ministry of the Environment, and Jack A. Ferguson, Chairman, Board of Negotiation.

33 Ibid.

34 Ibid.

35 Ibid.

36 Ibid.

37 Ibid.

38 Ibid.

39 Ibid.

40 Ibid.

41 Ibid.

42 Ibid.

43 Ibid.

44 *Pesticides Act* S.O. 1973, c.25, proclaimed in force 31 May 1974, as amended.

45 O. Reg. 618/74, as amended by 577/76, 183/77 and 28/77.

46 For example, the *Pits and Quarries Control Act*, S.O. 1971, c.96, c.11; O. Reg. 541/71, s.5, as amended by O. Reg. 107/72 s.4, and O. Reg. 94/73 s.1(2), which establish a fund for rehabilitating worked-out gravel pits and sand quarries; the proposed *Aggregates Act*, Bill 127, introduced into the Ontario Legislature, 14 June 1979, which provides for an annual licence fee,

part of which is to be paid to municipalities to cover the costs of servicing pits and quarries, part to be set aside as a fund for rehabilitating abandoned pits and quarries, and part to be retained by the Ontario Ministry of Natural Resources, which would administer the Act, to expand its enforcement staff. See also, the *Nuclear Liability Act*, R.S.C. 1970, c.29 (1st Supp.).

47 *The Environmental Protection Act*, S.O. 1971, c.86, s.46a.

48 Correspondence from D. A. McTavish, Regional Director, Ministry of the Environment, to the author, 28 March 1980.

49 Ibid.

50 Ed Turner, Director, Pollution Control Branch, Industrial Section, Ontario Ministry of the Environment, cited in Morrison, "Towards the Formulation of New Schemes," p. 60. Also, correspondence from McTavish.

51 Ontario, Ministry of the Environment, Provisional Certificate of Approval No. A230701 issued to York Sanitation Company Limited, 2 September 1976, condition 9.

52 *The Environmental Protection Act* S.O. 1971, c.86, s.34, as amended by S.O. 1972, c.106, S.O. 1974, c.20.

53 Ibid., ss.8(4), 39(2).

54 Frank E. Rovers Associates, "Funding for an Alternative Water Supply and Site Closure," submitted to the Central Region, Ontario Ministry of the Environment, 1975.

55 John Z. Swaigen, "Submission to the Ombudsman on behalf of Preserve our Water Resources Group, Stouffville, Ontario," pp. 19-20.

56 Report of the Environmental Hearing Board, 8 October 1975, p. 16.

57 Royal Commission of Inquiry Into Waste Management Inc., Testimony of Paul S. Isles, *Transcripts*, vol. ix, p. 1B12. However, see testimony of Dennis P. Caplice, vol. xii, pp. 1, 721-22.

58 S.O. 1979, c.91, referred to above as Bill 24, *The Environmental Protection Amendment Act, 1979.*

59 Statement of the Honourable H. C. Parrott, Minister of the Environment, to the Standing Resources Development Committee Hearings on Bill 24, the Environmental Protection Amendment Act, 1979, 28 August 1979.

60 Ibid.

61 *R. v. Sault Ste. Marie* (1978), 85 D.L.R. (3rd) 161, 40 ccc (2nd) 353 (scc).

62 Parrott, 3 December 1979.

63 Parrott, 28 August 1979.

64 Ibid.

65 *Fishermen's Assistance and Polluters' Liability Act*, S.M. 1970, c.32 (Continuing Consolidation F100), effective 1 June 1970.

66 *Oil and Hazardous Substances, and Hazardous Waste Response, Liability and Compensation Act*, Bill S. 1341, introduced 13 June 1979, amending the federal *Water Pollution Control Act* and the *Solid Waste Disposal Act*.

67 Douglas Costle, Administrator, U.S. Environmental Protection Agency, quoted in press release "Administration Proposes Hazardous Waste Cleanup Fund," issued by the Office of Public Awareness, United States Environmental Protection Agency, 13 June 1979.

68 *Oil and Hazardous Substances Act*, s.6.

69 "New Oil Spill Fund," *Congressional Quaterly*, 12 July 1976, p. 1,498.

70 Statement of Barbara Blum, Deputy Administrator, Environmental Protection Agency, before the Subcommittee on Transportation and Commerce, Committee on Interstate and Foreign Commerce, U.S., House of Representatives, 19 June 1979, p. 9.

71 Ibid., p. 8.

72 See, for example, the statement on behalf of the Environmental Defense Fund and eleven other conservation groups before the Subcommittee on Resource Protection and the Subcommittee on Environmental Pollution of the Senate Committee on Public Works concerning pending "Superfund" legislation, 19 July 1979, presented by Clifton E. Curtis of the Centre for Law and Social Policy; also the statement on behalf of the Environmental Defense Fund and seven other conservation groups before the Subcommittee on Transportation and Commerce of the House Interstate and Foreign Commerce Committee, 10 October 1979.

73 *Environmental Protection Act*, Swedish code of statutes 1969:387. The following discussion of the Swedish Environmental Protection Act is taken primarily from Morrison, "Towards the Formulation of New Schemes." Morrison in turn based much of his description on Royal Ministry for Foreign Affairs, Royal Ministry of Agriculture, National Environmental Protection Board, *Environmental Protection Act, Marine Dumping Prohibition Act with Commentaries* (Stockholm 1972); and on Edwin S. Mills, *The Economics of Environmental Quality* (New York: Norton, 1978).

74 Morrison, "Towards the Formulation of New Schemes," p. 38.

75 Ibid., p. 39.

76 Conversation with Linda McCaffrey, solicitor, Ontario Ministry of the Environment.

77 *Basic Law for Pollution*, Law No. 132, 1969.

78 *Pollution-Related Health Damage Compensation Law*, Law No. 119, October 1973, as amended in June 1974.

79 *Pollution Dispute Settlement Law*, Law No. 108 of 1 June 1970, as amended by law 88 of 31 June 1971, Law No. 52 of 3 June 1972 and Laws No. 84 and 101 of 1974.

80 Julian Gresser, "The 1973 Japanese Law for Compensation of Pollution Related Health Damage," *Law in Japan* 8:110.

81 *Air Pollution Control Law*, Law No. 97 of 1968.

82 *Water Pollution Control Law*, Law No. 138 of 1970.

83 Gresser, "The 1973 Japanese Law for Compensation," p. 117.

84 Japan, Environment Agency, *Quality of the Environment in Japan, 1975.*

85 Gresser, "The 1973 Japanese Law for Compensation," pp. 199, 120-21.

86 Ibid., p. 112.

87 Ibid., p. 131.

88 Ibid., pp. 119-21, which refers to a number of critical papers.

89 Shigehiro Nakashin, "Comparative Pollution Compensation Systems: A Discussion of Damage to Property and Loss of Income," Nomura Research Institute, Japan, November 1975; Yoshio Kanazawa, "A System of Relief for Pollution-Related Injury," *Law in Japan* 6:64; and Japan, Environment Agency, *Quality of the Environment in Japan, 1975*, Chapter 5.

90 Gresser, "The 1973 Japanese Law for Compensation," p. 115.

91 Ibid., p. 120.

92 "Towards the Formulation of New Schemes," p. 32.

93 "The 1973 Japanese Law for Compensation," p. 125.

94 Ibid.

95 Ibid., p. 116.

CHAPTER 6

1 Thanks to an anomymous referee.

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