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Compensating Victims of Hazardous Substance Pollution in the United States and Japan: A Comparative Analysis

David E. Bronston*

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Abstract

Part I of this Note presents an overview of the proposed system for compensation of victims of hazardous substance pollution in the United States. The focus will be on cost allocation, eligibility, the adequacy of compensation and the exclusivity of the remedy, as these factors reflect the goals of compensation and deterrence. Part II describes the Japanese system and experience with these factors. In Part III, the United States proposal is evaluated in light of the Japanese law and the Japanese experience under the law. The two systems are then evaluated in terms of the twin goals of compensation and deterrence. Analysis of the different approaches shows a stress on compensation in the United States proposal, and a mix of compensation and deterrence under the Japanese law. This Note concludes that in the field of hazardous substance pollution the goal of compensation should outweigh the goal of deterrence. The United States proposal reflects this preference.

COMPENSATING VICTIMS OF HAZARDOUS SUBSTANCE POLLUTION IN THE UNITED STATES AND JAPAN: A COMPARATIVE ANALYSIS

INTRODUCTION

The need to compensate victims of hazardous substance pollution¹ has become a major legislative policy issue in the United States.² Public concern over hazardous waste disasters, both in the United States³ and abroad,⁴ has fostered attempts to establish adequate compensatory schemes.⁵

1. This Note deals primarily with hazardous substances as defined broadly in the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. § 9601(14) (Supp. V 1981) [hereinafter cited as CERCLA]. As in CERCLA, the emphasis in this Note is on hazardous substances that have entered the environment in the form of wastes and spills. See *id.* § 9601(22).

2. See, e.g., Ember, *Legal Remedies for Toxics Victims Begin Taking Shape*, CHEM. & ENG'G NEWS, Mar. 28, 1983, at 11 (higher priority being given to bills providing redress for victims of exposure to hazardous substances); Main, *The Hazards Of Helping Toxic Waste Victims*, FORTUNE, Oct. 31, 1983, at 158 (important questions facing Congress in enacting law for hazardous substance victim compensation); Mosher, 'A Ticking Time Bomb'—*Compensation For Victims of Hazardous Waste Dumps*, NAT'L J., Jan. 15, 1983, at 120 (outlining effort to be made in 98th Congress for victims' compensation); Outen, *Injury from Hazardous Chemicals: Compensating Innocent Bystanders*, ENVTL. F., Feb. 1983, at 6 (difficult public policy issues involved in congressional debate); *Victim Compensation: Paying for the Damage Caused by Toxic Wastes*, CHEM. WEEK, Mar. 9, 1983, at 32 (action on victim's compensation taking place in Washington, the states and the courts).

3. In a speech before the National Agricultural Chemical Manufacturers Association, Senator Robert Stafford, Chairman of the Senate Environment and Public Works Committee, remarked that "the single category of pollution which they [the public] fear most is hazardous waste and toxic chemicals." Sen. Robert Stafford, Remarks at the National Agricultural Chemicals Association Board of Directors Winter Meeting 3 (Feb. 21, 1983) (available from the Office of Sen. Stafford).

Hazardous waste disasters in, among other places, Love Canal, New York, Toone, Tennessee, and Hopewell, Virginia have focused public attention on their dangers. See ENVTL. L. INST., 96TH CONG., 2D SESS., SIX CASE STUDIES OF COMPENSATION FOR TOXIC SUBSTANCES POLLUTION: ALABAMA, CALIFORNIA, MICHIGAN, MISSOURI, NEW JERSEY AND TEXAS 43-44, 47-48, 55-56 (Comm. Print 1980) (prepared for the Senate Comm. on Env't. and Public Works) [hereinafter cited as SIX CASE STUDIES]; OFFICE OF PUB. HEALTH, N.Y.S. DEP'T OF HEALTH, LOVE CANAL, A SPECIAL REPORT TO THE GOVERNOR AND LEGISLATURE 46-52 (1981) (chronology of events at Love Canal) [hereinafter cited as LOVE CANAL]. See generally M. BROWN, LAYING WASTE: THE POISONING OF AMERICA BY TOXIC CHEMICALS (1980) (dangers of hazardous waste in the United States); S. EPSTEIN, L. BROWN & C. POPE, HAZARDOUS WASTE IN AMERICA (1982) (overview of hazardous waste problems in the United States) [hereinafter cited as S. EPSTEIN & L. BROWN].

4. According to the Organisation for Economic Co-Operation and Development (OECD):

[R]esolutions passed by the World Health Assembly in 1977 and 1978 indicate growing worldwide concern about the adverse effects of chemicals on health. These

In the United States, common law tort remedies inadequately compensate those injured by exposure to hazardous substances.⁶ Procedural⁷ and substantive⁸ barriers, as well as exorbitant transaction costs,⁹ have prevented victims from collecting in court for their damages.¹⁰ Recognizing this inadequacy, Congress is considering

resolutions voiced special concern about the risk of chronic or combined toxic effects from exposures to chemicals. The increasing number of accidental releases of chemicals which have resulted in harm to man and the environment also provided grounds for concern.

ORG. FOR ECON. CO-OPERATION AND DEV., *THE STATE OF THE ENVIRONMENT IN OECD MEMBER COUNTRIES* 103 (1979) (citations omitted).

A large plurality of Japanese citizens recently identified environmental pollution by chemical substances as the most crucial environmental problem. ENV'T AGENCY, GOV'T OF JAPAN, *JAPAN ENVIRONMENT SUMMARY 1973-1982*, at 447 (1983) [hereinafter cited as *ENVIRONMENT SUMMARY*]. Recently, in Seveso, Italy, dioxin escaped from a chemical plant forcing the evacuation of the city and the hospitalization of some citizens. *N.Y. Times*, July 29, 1976, at 3, col. 3.

5. See Ember, *supra* note 2.

6. See *SIX CASE STUDIES*, *supra* note 3, at 520-21; INTERAGENCY TASK FORCE ON COMPENSATION AND LIABILITY FOR RELEASES OF HAZARDOUS SUBSTANCES, *THE SUPERFUND CONCEPT* 1, 24 (1979) [hereinafter cited as *SUPERFUND CONCEPT*]; Bartlett, *The Legal Development of a Viable Remedy for Toxic Pollution Victims*, 4 *TOXIC SUBSTANCES J.* 277, 277 (1983); Ginsberg & Weiss, *Common Law Liability for Toxic Torts: A Phantom Remedy*, 9 *HOFSTRA L. REV.* 859 (1981); Soble, *A Proposal for the Administrative Compensation of Victims of Toxic Substance Pollution: A Model Act*, 14 *HARV. J. ON LEGIS.* 683, 703 (1977); Trauberman, *Statutory Reform of "Toxic Torts": Relieving Legal, Scientific, and Economic Burdens on the Chemical Victim*, 7 *HARV. ENVTL. L. REV.* 177, 188 (1983) [hereinafter cited as *Trauberman, Toxic Torts*].

7. See *infra* notes 21-24 and accompanying text.

8. See *infra* notes 25-28 and accompanying text.

9. See *infra* notes 29-30 and accompanying text. It was recently stated: "Transaction costs include both governmental administrative costs, generally borne by the public, and [litigation] costs, such as the cost of acquiring information needed to meet a burden of proof, usually borne by participants in a reallocation proceeding." Note, *Allocating the Costs of Hazardous Waste Disposal*, 94 *HARV. L. REV.* 584, 585 (1981) [hereinafter cited as *Note, Allocating the Costs*].

10. See *Hazardous Substance Victim's Compensation Legislation: Hearing Before the Subcomm. on Commerce, Transp., and Tourism of the House Comm. on Energy and Commerce*, 98th Cong., 1st Sess.-104 (testimony of A. Roisman, Esq.) [hereinafter cited as *Hearings on Victim's Compensation*]. Anthony Roisman, testifying before the House Subcommittee on Commerce, Transportation and Tourism, stated that:

Today, seven years after the Love Canal disaster became a matter of public knowledge, . . . not a single victim of that tragedy has received any compensation for the health damages they suffered and continue to suffer. Nor have any other victims of hazardous waste been compensated for the damages they suffered—not in Times Beach, Missouri; not in Dallas, Texas; not in Midland, Michigan; not in Jackson Township, New Jersey; not in Hardeman County, Tennessee.

Id.

the Comprehensive Hazardous Substance Cleanup and Emergency Relief Act of 1984¹¹ (Proposed Bill). The Proposed Bill would reform traditional tort causes of action for hazardous waste injuries and create a federally-administered compensation system for the victims of these injuries.

Other countries have grappled with the problem of compensating pollution victims.¹² Since 1973, however, Japan has administered one of the most comprehensive compensation systems for victims of environmental pollution.¹³ A comparison between the Japanese administrative compensation system and that outlined in the most recent United States proposal would be a useful addition to the current policy debate over the structure of a compensation system for the United States.¹⁴

Part I of this Note presents an overview of the proposed system for compensation of victims of hazardous substance pollution in the United States.¹⁵ The focus will be on cost allocation, eligibility, the adequacy of compensation and the exclusivity of the remedy,¹⁶ as

11. H.R. 4813, 98th Cong., 2d Sess. (1984).

12. See, e.g., F. ANDERSON, A. KNEESE, P. REED, S. TAYLOR & R. STEVENSON, ENVIRONMENTAL IMPROVEMENT THROUGH ECONOMIC INCENTIVES 49 (1977) (compensation in East Germany for victims of air pollution) [hereinafter cited as F. ANDERSON & A. KNEESE]; ORG. FOR ECON. CO-OPERATION AND DEV., ENVIRONMENTAL POLICY IN SWEDEN 15-16 (1981) (primarily judicial action for compensation); J. SWAIGEN, COMPENSATION OF POLLUTION VICTIMS IN CANADA (1981) (discussing Canadian and foreign pollution damage legislation); Theim, *Environmental Damage Funds*, in ORG. FOR ECON. CO-OPERATION AND DEV., Compensation for Pollution Damage 151-56 (1981) (discussing Dutch air pollution fund).

13. See Pollution-Related Health Damage Compensation Law, Law No. 111 of 1973 (Japan) (amended 1974). Cf. *supra* note 12 and accompanying text (citing other less comprehensive systems in other countries).

14. The comparison with Japan serves several purposes. First, as one of the few countries to have enacted a comprehensive compensation system, cf. *supra* note 12 and accompanying text, Japan is an available model for evaluation and comparison. Second, the admiration in the United States for Japan's consensus building nonlitigious society makes examinations of their legal system useful as well. See *Another Way*, NAT'L L.J., Mar. 22, 1982, at 14, col. 1. Third, the Japanese system is a product of its development: it was tailored to particular crisis situations. See GOV'T OF JAPAN, ENVIRONMENTAL POLICY OF JAPAN, 1, 238-43 (1976). An analysis of the Japanese system's problems as a compensatory system could prevent a similar pattern of development in the United States. By not awaiting further hazardous waste crises to spur legislation, a system in the United States could be developed in a more objective atmosphere.

15. See *infra* notes 20-66 and accompanying text.

16. Together these factors define the outline of a compensation system: who pays for the compensation, see, e.g., Ginsberg & Weiss, *supra* note 6, at 933-34, who is compensated, *id.* at 938-40, what injuries are compensated, *id.* at 935-37, and how the system relates to the

these factors reflect the goals of compensation and deterrence.¹⁷ Part II describes the Japanese system and experience with these factors.¹⁸ In Part III, the United States proposal is evaluated in light of the Japanese law and the Japanese experience under the law.¹⁹ The two systems are then evaluated in terms of the twin goals of compensation and deterrence. Analysis of the different approaches shows a stress on compensation in the United States proposal, and a mix of compensation and deterrence under the Japanese law. This Note concludes that in the field of hazardous substance pollution the goal of compensation should outweigh the goal of deterrence. The United States proposal reflects this preference.

I. THE PROPOSED COMPENSATION SYSTEM IN THE UNITED STATES

A. Current United States Law and the Development of the Proposed System

Several procedural and substantive hurdles currently face potential plaintiffs injured by exposure to hazardous substances in the United States.²⁰ For example, a statute of limitations that begins to run from the date of exposure may bar a victim's cause of action,²¹

existing judicial system of compensation, *id.* at 932-33. They are relevant to the design of most compensation systems. *Id.* at 928-40.

17. See generally J. SWAIGEN, *supra* note 12, at 9-14 (explaining goals of fair, fast, full compensation and pollution abatement); Pfennigstorf, *Environment, Damages, and Compensation*, 1979 AM. B. FOUND. RESEARCH J. 347 (development of goals of systems on deterrence or compensation). See also Abraham, *Cost Internalization, Insurance, and Toxic Tort Compensation Funds*, 2 VA. J. NAT. RESOURCES L. 123, 124 (1982) (compensate those injured and promote care and safety by deterrence).

18. See *infra* notes 67-120 and accompanying text.

19. See *infra* notes 121-244 and accompanying text.

20. Rheingold & Jacobsen, *The Toxic Tort Cause of Action: Law and Procedure*, in TOXIC TORTS 1, 34-35 (P. Rheingold, N. Landau & M. Canavan eds. 1977).

21. Baurer, *Love Canal: Common Law Approaches to a Modern Tragedy*, 11 ENVTL. L. REV. 133, 146-53 (1980); Note, *Denial of A Remedy: Former Residents of Hazardous Waste Sites and New York's Statute of Limitations*, 8 COLUM. J. ENVTL. L. 161 (1982). In *Steinhardt v. Johns-Manville Corp.*, 54 N.Y.2d 1008, 430 N.E.2d 1297, 446 N.Y.S.2d 244 (1981), a case involving asbestos damage, the New York Court of Appeals held that the statute of limitations began to run when those claiming injury inhaled the foreign substance. *Id.* at 1010, 430 N.E.2d at 1299, 446 N.Y.S.2d at 246. The court rejected the argument that the statute of limitations commenced when the damage was or reasonably should have been discovered. *Id.* Therefore, as the dissent pointed out, plaintiffs were barred before they learned or could have learned that they had been injured by asbestos exposure. *Id.* at 1011, 430 N.E.2d at 1299, 446 N.Y.S.2d at 246 (Fuchsberg, J., dissenting).

given the unusually long period of latency for diseases arising from exposure to hazardous substances.²² Unless the jurisdiction has adopted a "date of discovery" rule,²³ the statutory period would likely run before the injury manifested itself.²⁴

The greatest obstacle to a toxic tort plaintiff's recovery is establishing the causal connection between exposure to a hazardous substance and an injury.²⁵ It is difficult to establish the origin of chronic diseases with absolute certainty, given the limited extent of scientific research²⁶ and the complex causes of many of these non-traumatic injuries and illnesses.²⁷ In many cases, scientific research has not clearly established the link between certain diseases and exposure to a toxic substance.²⁸

In addition to these hurdles, the prohibitive transaction costs of hazardous substance tort litigation make such a remedy unaffordable for many victims.²⁹ The litigation requires great resources

22. Trauberman, *Compensating Victims of Toxic Substances Pollution: An Analysis of Existing Federal Statutes*, 5 HARV. ENVTL. L. REV. 1, 2 (1981) [hereinafter cited as Trauberman, *Compensating Victims*]. Cancer, for example, has a latency period of up to 40 years. *Id.* Therefore, a victim might not discover the disease until after the right to sue has passed. *Hearings on Victim's Compensation, supra* note 10, at 343 (testimony of J. Trauberman).

23. The "discovery" rule has been adopted by 39 states. Trauberman, *supra* note 6, at 191 n.65. However, even with a discovery rule the plaintiff must still find a causal agent and responsible defendant, in order to recover. Such a task may be impossible given the amount of time that has elapsed since the exposure. *Id.* at 191.

24. *Id.* at 191-92.

25. Trauberman, *Compensating Victims, supra* note 22, at 3.

26. *Hearings on Victim's Compensation, supra* note 10, at 56 (testimony of Rep. J. LaFalce).

27. Acute injuries range from rashes to death. Chronic injuries include birth defects, cancers, and lung diseases. See Trauberman, *Toxic Torts, supra* note 6, at 180. Besides the long latency of chronic injuries, the fact that environmental and genetic factors can also be related to these diseases complicates a plaintiff's showing that the exposure caused the injury. *Id.* at 180-81.

28. See Toxic Torts Task Group, Am. Paper Inst./Nat'l Forest Prods. Ass'n, Toxic Torts Briefing Paper 8 (1983). The instances where a relationship is clear are limited. They are cigarette smoking and lung cancer, coal dust and black lung disease, and asbestosis and mesothelioma. *Id.*

29. See Trauberman, *Toxic Torts, supra* note 6, at 189; Note, *Liability for Generators of Hazardous Waste: The Failure of Existing Enforcement Mechanisms*, 69 GEO. L.J. 1047, 1060 (1981). One commentator stated: "In possibly analogous situations, for example asbestos exposure, only one of every three dollars going into tort litigation actually makes it to the injured party. The rest goes to the system—mostly to plaintiffs' and defendants' lawyers and insurance companies." G. Freeman, Jr., Hazardous Substances Liability and Compensation: An Overview of the Federal Scene 39 (Nov. 29, 1983) (paper delivered at conference sponsored by the California Foundation on Energy and the Economy).

of time and money mainly because scientific expertise is required on both sides.³⁰

The Ninety-sixth Congress recognized the need for both an administrative compensation system and toxic tort reform during the debate over the Comprehensive Environmental Response Compensation and Liability Act of 1980³¹ (CERCLA). CERCLA's "Superfund" was established to finance cleanup of hazardous waste sites.³² Congress omitted provisions for victims' compensation from CERCLA as a last-minute compromise to ensure passage of the cleanup provisions.³³ However, pursuant to CERCLA's section 301(e),³⁴ Congress authorized a study group to examine the adequacy of current common law and statutory remedies for victims of hazardous substance exposure and to recommend revisions in the law.³⁵ The study group recommended a two-tier solution: creation of an administrative compensation system,³⁶ and reform of the traditional tort cause of action.³⁷

30. See Trauberman, *Toxic Torts*, *supra* note 6, at 189 n.54. These expenses are particularly burdensome for an individual victim. For instance, a lawyer representing the plaintiffs in a toxic tort suit in Woburn, Massachusetts, stated:

A properly taken and thoroughly analyzed well water sample will cost \$1,000 to \$3,000. Medical tests and diagnoses can add thousands [of dollars] more. A groundwater study to connect the local dump to the polluted well will run \$25,000 and up, depending on the complexity of the problem. Epidemiological studies to demonstrate that among those exposed to the toxic substances there is a statistically relevant increased level of the illness suffered by the victim will add \$50,000 or more. Lawyers taking toxic tort cases are anticipating a minimum of \$100,000 to \$200,000 in costs just for gathering the scientific and medical information required to prove a claim.

Hearings on Victim's Compensation, *supra* note 10, at 108 (testimony of A. Roisman, Esq.). As a result, smaller claims are shut out of the system. See Trauberman, *Toxic Torts*, *supra* note 6, at 189. Class actions are also difficult, particularly because of strict notice requirements and minimal amounts in controversy. Bartlett, *supra* note 6, at 282.

31. 42 U.S.C. §§ 9601-9657 (Supp. V 1981).

32. *Id.* §§ 9631-9633.

33. See, e.g., *Hearings on Victim's Compensation*, *supra* note 10, at 42 (testimony of Rep. E. Markey); Fitzgerald & Machowsky, *Superfund II: Compensating Victims of Hazardous Substances*, *FED. B. NEWS & J.*, Apr. 1983, at 196; Garrett, *Compensating Victims of Toxic Substances: Issues Concerning Proposed Federal Legislation*, 13 *ENVTL. L. REP.* 10172 (1983).

34. 42 U.S.C. § 9651(e) (Supp. V 1981).

35. *Id.* § 9651(e)(1), (4)(a).

36. SUPERFUND SECTION 301(E) STUDY GROUP, 97TH CONG., 2D SESS., *INJURIES AND DAMAGES FROM HAZARDOUS WASTES—ANALYSIS AND IMPROVEMENT OF LEGAL REMEDIES* 206-54 (Comm. Print 1982) (prepared for the Senate Comm. on Env't and Public Works) [hereinafter cited as 301(E) STUDY GROUP REPORT].

37. *Id.* at 255-66.

During the Ninety-eighth Congress several legislators incorporated the study group's findings and recommendations into five bills, each allowing for compensation of victims of exposure to hazardous substances either from an administrative fund or through a reformed tort action in federal court.³⁸ Other legislators introduced amendments to the Toxic Substances Control Act³⁹ (TSCA) and to the bill reauthorizing the Resource Conservation and Recovery Act⁴⁰ (RCRA), both of which address only the tier two causes of action.⁴¹

B. *The Proposed Bill*

The Proposed Bill was introduced in the second session of the Ninety-eighth Congress as an amendment to RCRA.⁴² The Proposed Bill is a reauthorization of CERCLA,⁴³ providing for the cleanup of hazardous waste sites and spills.⁴⁴ The Proposed Bill also creates a two-tier approach to compensation.⁴⁵ First, it allows people who have been injured by exposure to hazardous substances to file a claim with the Administrator of the Environmental Protection Agency (EPA) for emergency relief.⁴⁶ Second, it creates a federal cause of action for injuries from hazardous substances.⁴⁷

The Proposed Bill allows a victim to seek compensation from the administrative compensation system or in a civil action, or both.⁴⁸ However, if the victim recovers from the administrative fund and then pursues the judicial remedy against a responsible

38. See S. 946, 98th Cong., 1st Sess. (1983); S. 945, 98th Cong., 1st Sess. (1983); S. 917, 98th Cong., 1st Sess., 129 CONG. REC. S3927-29 (daily ed. Mar. 24, 1983); H.R. 2582, 98th Cong., 1st Sess. (1983); H.R. 2482, 98th Cong., 1st Sess. (1983).

39. 15 U.S.C. §§ 2601-2629 (1976 & Supp. V 1981).

40. 42 U.S.C. §§ 6901-6987 (1976 & Supp. V 1981).

41. For the offered amendment to the Toxic Substances Control Act, see H.R. 4303, 98th Cong., 1st Sess. (1983). For the amendment to the Resource Conservation and Recovery Act reauthorization, H.R. 2867, 98th Cong., 1st Sess. (1983), see 129 CONG. REC. H5802 (daily ed. July 27, 1983).

42. 42 U.S.C. §§ 6901-6987 (1976 & Supp. V 1981).

43. See *infra* note 64 and accompanying text. CERCLA provides authority to collect the Superfund taxes only until 1985, unless Congress reauthorizes it. 42 U.S.C. § 9653 (Supp. V 1981).

44. H.R. 4813, sec. 101, 98th Cong., 2d Sess. (1984).

45. *Id.* secs. 202, 402.

46. *Id.* sec. 202.

47. *Id.* sec. 402, §§ 1121-1132.

48. *Id.* secs. 202, 402.

party, the victim is entitled to recover only for damages in excess of the administrative award.⁴⁹ The Proposed Bill requires deduction of compensation for the same injury paid by any collateral source, public or private, from the administrative compensation or from recovery in a court action.⁵⁰ When a claim is paid from the administrative compensation fund, the government is subrogated to the victim's rights up to the amount of compensation paid.⁵¹

The Proposed Bill allows compensation from the administrative compensation fund for disability,⁵² relocation,⁵³ and all medical expenses.⁵⁴ Victims are to be compensated for lost earnings with a U.S.\$2000 per month maximum for up to five years.⁵⁵ Rehabilitation expenses are included in the Proposed Bill⁵⁶ as are injuries occurring prior to birth.⁵⁷ The administrative compensation fund, however, does not provide recovery for pain and suffering.

To be eligible for compensation from the fund, a victim need only show injury, exposure, and the theoretical possibility that the exposure caused or significantly contributed to the injury.⁵⁸ This showing creates a rebuttable presumption that the exposure caused the injury.⁵⁹ The administrator of EPA can overcome the presump-

49. *Id.* sec. 402, § 1132(a).

50. *Id.* Payment of claims under the administrative system entitles the government to a lien on collateral recoveries. *Id.* § 1132(b). The Proposed Bill does not allow any person eligible for workman's compensation to recover for injuries from hazardous substances in the administrative compensation system or in court. *Id.* § 1133.

51. *Id.* sec. 202, § 1115(a).

52. *Id.* § 1113(a)(1)(B).

53. *Id.* § 1113(a)(1)(C).

54. *Id.* § 1113(a)(1)(A).

55. *Id.* § 1113(a)(1)(B).

56. *Id.* sec. 102, § 1101(a)(2). Medical costs include any "rehabilitative programs within the scope of section 103 of the Rehabilitation Act of 1973 (29 U.S.C. 723)." *Id.*

57. *Id.* § 1101(a)(3). Consequently, the Proposed Bill compensates for medical expenses arising from the teratogenic effects of exposure. Teratogens are substances that damage developing fetuses, causing birth defects. S. EPSTEIN & L. BROWN, *supra* note 3, at 36. Teratogenic effects are a possible latent hazard of mercury poisoning and dioxin contamination and polychlorinated biphenyl (PCB) pollution. SIX CASE STUDIES, *supra* note 3, at 7-8. Cadmium is linked to birth defects as well. S. EPSTEIN & L. BROWN, *supra* note 3, at 225.

58. H.R. 4813, sec. 202, § 1114(b)(1), 98th Cong., 2d Sess. (1984).

59. *Id.* To create the presumption, the claimant may utilize a broad range of relevant evidence not usually admissible in trials. This evidence includes epidemiological studies, animal studies, and tissue studies. *Id.* § 1114(c). Epidemiology is the statistical study of disease occurrence in human populations. Trauberman, *Toxic Torts*, *supra* note 6, at 186 n.46. These studies are admitted because proof in environmentally-caused injuries requires "evidence on the 'frontiers of scientific knowledge.'" *Hearings on Victim's Compensation*, *supra* note 10, at 344 (testimony of J. Trauberman). It is similarly difficult to extrapolate

tion by establishing, with a reasonable degree of certainty, that the exposure did not cause or significantly contribute to the injury.⁶⁰ These procedural provisions reduce the victim's burden of establishing causation.⁶¹ The Proposed Bill provides for administrative hearings⁶² and federal judicial review⁶³ for the appeal of claims determinations.

The reauthorization of the CERCLA tax scheme provides the financing for the administrative compensation fund.⁶⁴ The Proposed Bill establishes the Hazardous Substance Trust Fund, financed by oil and chemical feedstock taxes and waste disposal taxes.⁶⁵

The Proposed Bill offers an administrative system for compensation in the United States. Because the Japanese system provides a model for comparison,⁶⁶ it will be discussed in the next section.

II. THE JAPANESE LAW FOR COMPENSATING HEALTH DAMAGE FROM POLLUTION

A. *The Development of the Law*

Japan's compensation system was enacted in response to several pollution-related disasters that occurred in Japan during

from the effects of exposures on animals and tissue cultures, the effects of exposure on human populations. See Trauberman, *Toxic Torts*, *supra* note 6, at 186 n.46. While these types of evidence are imprecise, they may be the only types at all probative of causation that are available to a claimant. See *id.* at 218-19.

60. H.R. 4813, sec. 202, § 1114(b)(2), 98th Cong., 2d Sess. (1984).

61. The civil action in section 402 also creates a rebuttable presumption. See *id.* sec. 402, § 1123. In court, however, the plaintiff must show more than the possibility that there is a reasonable likelihood that the exposure caused the injury. The plaintiff must show that there is a reasonable likelihood that the exposure *did* cause or significantly contribute to the injury. *Id.* sec. 402, § 1123. The presumption affects only the burden of going forward with the case and does not affect the plaintiff's burden of proof. *Id.* The plaintiff must still prove his case by a preponderance of the evidence. FED. R. EVID. 301.

62. H.R. 4813, sec. 202, § 1114(e)(1), 98th Cong., 2d Sess. (1984). The administrator awards attorneys fees and expert witness costs to any claimant who prevails in the administrative hearing. *Id.* § 1114(e)(3).

63. *Id.* § 1116.

64. See Statement of Honorable James J. Florio, Chairman, Subcommittee on Commerce, Transportation and Tourism, Introduction of Superfund Reauthorization Legislation (Feb. 9, 1984) (introducing H.R. 4813 as the CERCLA reauthorization). CERCLA is funded mainly by a tax on oil and chemical feedstocks in the form of specified organic chemicals and certain heavy metals. 42 U.S.C. § 9631(a), (b); 26 U.S.C. §§ 4611-4622 (Supp. V 1981).

65. H.R. 4813, secs. 301, 321, 331, 98th Cong., 2d Sess. (1984). The waste end fee was not included in CERCLA as part of its Superfund. See *supra* note 64.

66. See *supra* note 13-14 and accompanying text.

its post-World War II industrial drive.⁶⁷ Under Japan's civil code,⁶⁸ however, victims of these disasters faced problems in court⁶⁹ not unlike those facing their counterparts in the United States today.⁷⁰ The absence of judicial remedies forced victims to rely on the inadequate extra-judicial payments made voluntarily by industry.⁷¹ A statutory attempt⁷² at administrative compensation was also inadequate because it provided compensation only for medical costs and was underfinanced due to limited contributions from industry.⁷³

The most important impetus, though, behind the current Pollution-Related Health Damage Compensation Law⁷⁴ (Japanese Law) was Japan's four major pollution trials.⁷⁵ The suits involved

67. See Gresser, *The 1973 Japanese Law for the Compensation of Pollution-Related Health Damage: An Introductory Assessment*, 8 LAW JAPAN 91, 97-98 (1975). One disaster was the outbreak of Minamata disease in the mid-fifties causing pain, paralysis and death. *Id.* at 97. The outbreak was traced to effluents from a local fertilizer plant in Minamata Bay. *Id.* at 97, 103. Another disaster was the outbreak of respiratory diseases in the mid-sixties in Yokkaichi, an industrial city of refineries, petrochemical, and power plants. *Id.* at 97-98. In Toyama, in 1955, many residents suffered from what came to be known as Itai-Itai disease, traced to cadmium poisoning. *Id.* at 98. In 1964, there was a second outbreak of Minimata disease in Niigata City. *Id.*; see *infra* note 75 (discussing the diseases).

68. MINPŌ (Civil Code), Law No. 89 of 1896 and Law No. 9 of 1898 (Japan).

69. See Gresser, *supra* note 67, at 100 ("Under the Civil Code, . . . an injured party bore the entire burden of showing that a polluter's activity (i.e., discharge of pollutants from a factory) was the direct, scientific cause of the injury.").

70. See *supra* note 20-30 and accompanying text.

71. See Gresser, *supra* note 67, at 98-99. These payments, called *mimaikin*, were traditional means of compensating victims of accidents. *Id.* at 98. The payments were inadequate because of the voluntary nature of the payments, the insufficient amounts of compensation, and the lack of a deterrent factor. See *id.* at 99.

72. Law Concerning Special Measures for the Relief of Pollution-Related Victims, Law No. 90 of 1969 (Japan). For a discussion of this law, see Kanazawa, *A System of Relief for Pollution-Related Injury*, 6 LAW JAPAN 65 (1973).

73. See GOV'T OF JAPAN, *supra* note 14, at 236-38.

74. Law No. 111 of 1973 (Japan).

75. These are: Judgment of Mar. 20, 1973, Kumamoto Dist. Ct., 696 HANREI JIHŌ 15 (Kumamoto mercury poisoning case); Judgment of July 29, 1972, Tsu Dist. Ct., Yokkaichi Branch, 672 HANREI JIHŌ 30 (Yokkaichi air pollution case); Judgment of Sept. 29, 1971, Niigata Dist. Ct., 642 HANREI JIHŌ 96 (Niigata mercury poisoning case); Judgment of June 30, 1971 Toyama Dist. Ct., 635 HANREI JIHŌ 17, *aff'd*, Judgment of Aug. 9, 1972, Nagoya High Ct., Kanazawa Branch, 674 HANREI JIHŌ 25 (Toyama cadmium poisoning case). For partial translations of the opinions in English, see J. GRESSER, K. FUJIKURA & A. MORISHIMA, ENVIRONMENTAL LAW IN JAPAN 57-63 (Toyama), 67-83 (Niigata), 86-103 (Yokkaichi), 106-24 (Kumamoto) (1981) [hereinafter cited as J. GRESSER & K. FUJIKURA]. The cadmium suit was against the mining company Matsui Kinzoku Kogyo for the cadmium poisoning resulting in

damages totalling 2262 million yen (roughly U.S.\$5,000,000).⁷⁶ The courts, in ruling for the plaintiffs, lowered the causation requirements by allowing admission of epidemiological evidence and raised the standard of care demanded of industry.⁷⁷ The Japanese Diet then enacted legislation holding polluters strictly liable in civil actions.⁷⁸ The new liability standard did not appease victims' advocates because there were still many obstacles to recovery: difficulties in proving causation, long delays, and considerable expense.⁷⁹ The higher judicial and statutory standards of liability caused concern among business and industry groups.⁸⁰ As a result, those groups also supported the enactment of an administrative compensation system.⁸¹

B. *The Japanese Law*

The Japanese Law creates two classes of regions: Class I regions where air pollution-related diseases are compensated⁸² and Class II regions where diseases related to specific toxic substances are compensated.⁸³ The current Class II diseases are Minamata

cases of Itai-Itai (ouch-ouch) disease among the inhabitants of the Jinzu river basin in Toyama Prefecture. The name derives from the pain suffered by the victims causing them to yell out "Itai-Itai." GOV'T OF JAPAN, *supra* note 14, at 239. The mercury suit was against the Showa Denko Chemical Company for damages from discharges of mercury poisoning causing Minamata disease in Niigata Prefecture. *Id.* at 238-39. The air pollution suit was against six different companies in Yokkaichi for damages from air pollution causing respiratory diseases in Yokkaichi, *Id.* at 239-40. A second Minamata disease suit was against the Chisso Corporation, the fertilizer manufacturer which discharged mercury into Minamata Bay in Kumamoto Prefecture. *Id.* at 240.

76. The breakdown of the damages awarded is 1470 million yen in the suit against Chisso in Kumamoto, 200 million yen in Yokkaichi, 530 million yen in Niigata, and 62 million yen in the Itai-Itai disease suit. GOV'T OF JAPAN, *supra* note 14, at 238-40.

77. *Id.* at 240-41.

78. Law to Amend Portions of the Air Pollution Control and Water Pollution Control Law, Law No. 84 of 1972 (Japan).

79. J. GRESSER & K. FUJIKURA, *supra* note 75, at 289.

80. *See id.* Most threatening to those groups was the Yokkaichi decision, Judgment of July 24, 1972, Tsu Dist. Ct., Yokkaichi Branch, 672 HANREI JIHŌ 30, which held the defendants in that case jointly and severally liable. *Id.* Thousands of other people suffering health damage and exposed to air pollution could sue those industries releasing sulfur dioxide.

81. J. GRESSER & K. FUJIKURA, *supra* note 75, at 289. For example, a national industrial association acted as a spokesman for industry in structuring the program and endorsing the system that was eventually adopted. F. ANDERSON & A. KNEESE, *supra* note 12, at 51.

82. Law No. 111 of 1973, art. 2 (Japan).

83. *Id.*

disease,⁸⁴ Itai-Itai disease,⁸⁵ and chronic arsenic poisoning.⁸⁶ There are presently 41 Class I regions⁸⁷ and five Class II regions.⁸⁸

The Japanese system addresses the four structural factors of compensation systems: the relation of the system to judicial remedies; the extent of compensation; the requirements of eligibility; and the allocation of cost.⁸⁹ First, an injured party certified as the victim of a pollution-related disease and compensated under the law may still recover in court for any uncompensated injury.⁹⁰ Collateral source payments for the same injury, however, are not permitted if double recovery results.⁹¹ Under the law, a victim may seek compensation through either workman's compensation,⁹² national health insurance,⁹³ a private settlement with the polluter,⁹⁴ or the compensation law.⁹⁵

Second, the Japanese Law lists seven types of expenses for which compensation is available for certified victims.⁹⁶ Compensa-

84. ENV'T AGENCY, GOV'T OF JAPAN, QUALITY OF THE ENVIRONMENT IN JAPAN 1982, at 274 (1983) (Table 6-1) [hereinafter cited as QUALITY OF THE ENVIRONMENT].

85. *Id.*

86. *Id.*

87. *Id.* at 273. There were 36,371 victims certified in Class I regions as of April 1976. GOV'T OF JAPAN, *supra* note 14, at 260. By the end of 1981, 82,566 victims were certified. QUALITY OF THE ENVIRONMENT, *supra* note 84, at 274.

88. QUALITY OF THE ENVIRONMENT, *supra* note 84, at 274. There were 1581 victims as of April 1976. GOV'T OF JAPAN, *supra* note 14, at 260. By the end of 1981, 2054 victims were certified. *See* QUALITY OF THE ENVIRONMENT, *supra* note 84, at 274.

89. *See supra* note 16.

90. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 290. However, because of the law's structure in allocating responsibility in the two classes, the government cannot be subrogated to a compensated victim's rights. *See Toxic Substance Control Act Amendments: Hearings Before the Subcomm. on Consumer Protection and Finance of the House Comm. on Interstate and Foreign Commerce*, 95th Cong., 1st Sess. 363 (1978) (testimony of J. Gresser) [hereinafter cited as *Hearings on TSCA Amendments*]. There is no identified polluter in Class I regions to sue. In Class II regions, the specific polluter pays, eliminating the need for the government to recover. *See* Law No. 111 of 1973, art. 62 (Japan).

91. Law No. 111 of 1973, art. 14. (Japan).

92. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 296.

93. *See id.*

94. *See* Aronson, *Review Essay: Environmental Law in Japan*, 7 HARV. ENVTL. L. REV. 135, 159 n.98 (1983).

95. Law No. 111 of 1973 (Japan).

96. *Id.* art. 3, para. 1. These benefits are: (1) medical care benefits and medical care expenses; (2) compensation for handicaps; (3) compensation for survivors; (4) lump compen-

tion is available primarily for medical treatment⁹⁷ and disability.⁹⁸ The law does not provide for payments for pain and suffering,⁹⁹ property damage,¹⁰⁰ or relocation.¹⁰¹ Certification is valid for a specific period depending on the disease,¹⁰² but may be renewed or extended.¹⁰³

Third, to be eligible for certification, victims must show that they lived in, worked in, or commuted into a region¹⁰⁴ already designated by Cabinet order.¹⁰⁵ Class I designation is based on epidemiological evidence showing a high incidence of diseases related to air pollution.¹⁰⁶ In Class II areas, the government has established the causal relation between the specific disease and the specific toxic substance.¹⁰⁷ Those suffering from the designated diseases are certified by local officials¹⁰⁸ on the advice of local certification councils.¹⁰⁹ There is no time limit for someone suffering health damage to apply for certification.¹¹⁰ In addition, denial of certification is reviewable through an administrative appeals proc-

sation payment for survivors: (5) child compensation allowance; (6) medical care allowance; and (7) funeral expenses. *Id.*

97. *Id.* arts. 19-24. Medical care is fully reimbursed. *Id.* art. 19, para. 1. Local governments provide rehabilitation programs. *Id.* art. 46.

98. *See id.* arts. 25-28. The amount recovered for disability is not based on actual income, but on a formula depending on the extent of disability and a percentage of the average wage of age and sex groups. *See id.* art. 26, para. 1. Other compensation includes two methods of allocating survivor's benefits. *See id.* arts. 29-38 (Japan). There is a method of allocating benefits to children who are certified as victims. *See id.* art. 39. Payments are provided for an allowance for the expenses involved in attaining medical care and for funerals. *See id.* arts. 40, 41. Clearly, for those who are certified as victims, the Japanese Law provides broad physical health-related compensation.

99. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 295.

100. *Id.*

101. The law, however, does provide for relocation to rehabilitation programs in "nonpolluted areas elsewhere." Law No. 111 of 1973, art. 46, para 1. (Japan). These programs are usually temporary. Interview with Bruce Aronson, Esq. (Apr. 20, 1984).

102. Law No. 111 of 1973, art. 7 (Japan). The Japanese Cabinet sets the period of validity for designated diseases. *Id.* para. 1.

103. *Id.* art. 8. Class II certification is permanent. Interview with Bruce Aronson, Esq. (Apr. 20, 1984).

104. Law No. 111 of 1973, art. 4 (Japan).

105. *Id.* art. 2.

106. *See* GOV'T OF JAPAN, *supra* note 14, at 245-46.

107. *See id.* at 246-47.

108. Law No. 111 of 1973, art. 4 (Japan).

109. *Id.* arts. 44-45.

110. *See* J. SWAIGEN, *supra* note 12, at 69.

ess¹¹¹ and, after administrative remedies are exhausted, through appeal to the courts.¹¹²

Fourth, the Japanese Law finances Class I compensation payments from the proceeds of auto weight taxes and a levy on industries that emit sulfur dioxide.¹¹³ Because no specific source is identified, sulfur dioxide-emitting industries share a collective responsibility. Industries emitting sulfur dioxide within a Class I area are taxed at an average rate nine times that of industries outside the area.¹¹⁴ Because a specific polluter is identified in Class II areas,¹¹⁵ victims in those regions are paid directly by the polluter.¹¹⁶ In both Class I and Class II regions, a joint government and industry association collects the funds,¹¹⁷ then distributes to local governments the amounts necessary to compensate victims or reimburse local medical establishments.¹¹⁸ The law also provides for rehabilitation programs funded partly by the pollution levies and partly by the government's general revenues.¹¹⁹ General revenues also finance the administrative costs of the association.¹²⁰

III. ANALYSIS AND COMPARISON

A. *Structure and Goals of Compensation Systems*

Both the United States and Japanese administrative compensation systems were developed to provide alternatives to inadequate tort liability systems.¹²¹ Compensation systems, like the tort liability

111. Law No. 111 of 1973, arts. 106-135 (Japan).

112. *See id.* art. 108.

113. *See id.* arts. 49-62. "The polluters group is divided into two sub-groups: stationary sources of pollutants, such as large factories and places of business, and mobile sources of pollutants, such as the large varieties of motor vehicles." GOV'T OF JAPAN, *supra* note 14, at 255. Auto taxes account for 20% of the Class I payments, while the mining-manufacturing industries and power stations account for 80% of the Class I payments, based on the ratio of emitted pollutants. *See id.* at 255-58.

114. GOV'T OF JAPAN, *supra* note 14, at 255.

115. *Id.* at 258.

116. *Id.*

117. The association is called the Pollution-Related Health Damage Compensation Association. Law No. 111 of 1973, arts. 68-105 (Japan).

118. *Id.*

119. *Id.* art. 49.

120. *Id.* art. 97.

121. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 289. H.R. 4813, 98th Cong., 2d Sess. (1984) and its predecessor bill, H.R. 2582, 98th Cong., 1st Sess. (1983), stem from the conclusions and recommendations of the 301(e) study group report, 301(E) STUDY GROUP

systems they partially replace, can be developed to compensate injury and deter injurious behavior.¹²² The structure of a compensation system can stress one of these goals.

The goal of compensation is to provide assistance to those for whom barriers would otherwise preclude recovery.¹²³ The loss is more than the victim should be expected to bear, no matter how it was caused.

Deterrence requires a firm-specific remedy. Such a remedy is created by imposing the costs of harmful behavior on the individual firm responsible for that behavior, thus providing a financial incentive for firms to abate the pollution.¹²⁴ Effective deterrence requires identification of individual polluting firms and allocation of the costs of hazardous substance injuries to them. Administrative compensation systems, however, can perform these functions no better than traditional tort systems.

A system that provides some deterrence is attractive for several reasons. It would ultimately reduce the number of victims by abating hazardous waste pollution, thereby benefitting a larger group.¹²⁵ In addition, it is morally more attractive to associate liability with a specific polluter than to diffuse it among a number of potentially innocent firms.¹²⁶ It is also economically more efficient to assign economic costs to those firms responsible for the costs.¹²⁷

REPORT, *supra* note 36. See *Hearings on Victim's Compensation*, *supra* note 10, at 42 (testimony of Rep. E. Markey).

122. Abraham, *supra* note 17, at 124.

123. See Pfennigstorf, *supra* note 17, at 365.

124. J. SWAIGEN, *supra* note 12, at 9-11.

125. See *id.* at 11-13. Requiring the polluter to pay means that profits are maximized by avoiding hazardous waste accidents and injuries. Comment, *Compensating Hazardous Waste Victims: RCRA Insurance Regulations and a Not So "Super" Fund Act*, 11 ENVTL. L. 689, 695 (1981) [hereinafter cited as Comment, *Compensating Hazardous Waste Victims*]. The industry creating the dangers has an incentive to prevent future injuries and thereby reduce costs. *Id.* The result would be fewer accidents and less pollution to society as a whole. *Id.*

126. See J. SWAIGEN, *supra* note 12, at 11-13. Those who stand to profit from risk-creating activities should be responsible if any harm arises from their activities. *Id.*

127. Note, *Toxic Substance Contamination: The Risk-Benefit Approach to Causation Analysis*, 14 U. MICH. J.L. REF. 53, 68 (1980) [hereinafter cited as Note, *Toxic Substance Contamination*]. When costs are not internalized, resources are misallocated because pollution-causing products are underpriced in relation to products created without causing pollution. Comment, *Compensating Hazardous Waste Victims*, *supra* note 125, at 695. See generally R. RABIN, *PERSPECTIVES ON TORT LAW*, 139-210 (1976) (overview of economic aspects of tort liability).

A system stressing compensation, however, is almost a necessity in this field because an alternative system stressing both compensation and deterrence would be limited to injuries where a hazardous substance and a firm responsible for that substance could be identified.¹²⁸ In such a mixed system, victims of injuries where substances and firms were not identified would be denied compensation.

Consequently, the moral arguments for compensating innocent victims of hazardous substances quickly and inexpensively are stronger than for deterring identifiable firms from polluting by making them absorb the costs.¹²⁹ Moreover, it is difficult to reliably assign physical injury costs to firms responsible for these costs given the difficulties of establishing causation. The optimal hazardous substance compensation fund should stress the compensation goal.

The Proposed Bill for victims' compensation in the United States stresses compensation and minimizes, without completely eliminating, an emphasis on deterrence.¹³⁰ The Japanese system, on the other hand, is a mixed system of compensation and deterrence.¹³¹ The result in Japan has been a system limited to identified hazardous substances coming from certain firms and causing specified injuries.¹³² An analysis of the four structural factors described above¹³³ illustrates the distinction between the two systems and provides guidelines for the design of a desirable compensation system for victims of hazardous substance pollution.¹³⁴

B. *Analysis of Four Factors*

1. Relationship to Judicial Remedies

The first issue of analysis of the two systems is the relationship of the administrative system to the judicial system. The question is

128. J. SWAIGEN, *supra* note 12, at 11.

129. Because many persons and groups benefit from the industrial processes which produce the hazardous substances, costs should be spread to concentrate on compensating victims rather than deterring polluters. *Id.* at 9.

130. *See generally* H.R. 4813, 98th Cong., 2d Sess. (1984).

131. *See generally* Law No. 111 of 1973 (Japan).

132. *See supra* notes 82-86 and accompanying text.

133. These factors are the relation to the judicial remedy, damages compensated, eligibility, and cost allocation. *See supra* note 16.

134. *See infra* notes 135-244 and accompanying text.

whether the victim should have access to both remedies, or whether an exclusive choice should be required.

The compensation goal requires that victims not fully compensated from the administrative compensation fund retain the right to sue directly the firms allegedly responsible for their damages.¹³⁵ The deterrent goal requires polluters to pay the full cost of any damages they cause.¹³⁶

If the law does not allow a victim inadequately compensated by the quicker administrative system to pursue a remedy against a polluter in a civil action,¹³⁷ then the system loses the deterrent factor.¹³⁸ In order to achieve deterrence and adequate compensation, a system should not require exclusive remedies.

However, industry and business critics of nonexclusive remedies argue that such a system would provide a fund for subsidized litigation against them.¹³⁹ Such critics fear that plaintiffs would reap a windfall by using the award from the compensation system to fund a subsequent lawsuit.¹⁴⁰

135. J. SWAIGEN, *supra* note 12, at 10. See also Gaskins, *Tort Reform in the Welfare State: The New Zealand Accident Compensation Act*, 18 OSGOOD HALL L.J. 238, 240 (1980) (compensation seeks to restore a victim to the status quo).

136. See *supra* note 124 and accompanying text.

137. The subrogation rights of the administrative fund are equally important to the deterrent aspect. "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 . . . to recover payments made out of the fund." J. SWAIGEN, *supra* note 12, at 10. A fund which forces a choice of remedies and does not provide for subrogation would relieve a tortfeasor of liability once a victim received compensation for injuries caused by the tortfeasor. Abraham, *supra* note 17, at 135.

138. A cause of action would still exist but not in tandem with the compensation system. The victim would have to choose one or the other. See Ginsberg & Weiss, *supra* note 6, at 932-33 (proposing a compensation fund as exclusive remedy but only on assumption that victim made whole by proposed fund). See also Trauberman, *Toxic Torts*, *supra* note 6, at 245 (exclusive remedy lowers transaction costs).

139. See Garrett, *supra* note 33, at 10175; American Ins. Ass'n, Preliminary Paper on Proposed Hazardous Substance Victim Compensation Legislation, reprinted in *Hearings on Victim's Compensation*, *supra* note 10, at 420, 456-59; Leslie Cheek, III, Statement Before the House Subcomm. on Investigations and Oversight of the Comm. on Public Works and Transportation. Concerning Compensation of Persons Alleging Injuries or Diseases Resulting from Exposure to Hazardous Substances 12-14 (July 27, 1983) (available from Crum & Foster Ins. Cos., Washington, D.C.) [hereinafter cited as Cheek Statement].

140. Cheek Statement, *supra* note 139, at 12-13. However, the 301(e) study group recommended that a claimant in the administrative system also have access to the tort claim in court. 301(E) STUDY GROUP REPORT, *supra* note 36, at 197. To deter claimants from using both remedies frivolously, the study group also recommended that the judge be permitted to impose costs on the plaintiffs not recovering at least 25% more in court than from the

Both the Japanese Law¹⁴¹ and the Proposed Bill in the United States¹⁴² allow a victim who has received compensation in the administrative system to pursue a civil action for any uncompensated injuries.¹⁴³ From the compensatory standpoint, neither country's administrative system provides for payments for pain and suffering or other damages such as genetic damage, infertility, or property damage.¹⁴⁴ The United States' Proposed Bill does not provide compensation for long-term disability beyond five years.¹⁴⁵ Such recoveries are available only in civil actions.¹⁴⁶

From the deterrent standpoint, the nonexclusive remedy system would provide greater deterrence in the United States than in Japan. The civil action in the United States would be the most direct way to have the responsible polluter pay for the damage.¹⁴⁷ In the Japanese system, deterrence is more a part of the administrative system because of its collection of levies against polluters.¹⁴⁸

administrative system. *Id.* at 202. Dissenters in the 301(e) study group felt that a plaintiff must choose between the administrative and judicial remedies. *See id.* at 286. They felt that a compensated claimant should be allowed to sue only if he could show in a court hearing that barring a tort action because of administrative compensation would be unconscionable and that special circumstances warranted the lawsuit. *Id.* at 287-88.

141. Law No. 111 of 1973 (Japan).

142. H.R. 4813, 98th Cong., 2d Sess. (1984).

143. *See supra* notes 46-47, 90 and accompanying text.

144. *See supra* notes 52-57 (Proposed Bill), 96-102 (Japanese Law) and accompanying text. These injuries might result from exposure to hazardous wastes. SIX CASE STUDIES, *supra* note 3, at 7-8. For example, in Alabama, polychlorinated biphenyl (PCB) leaked into Lake Weiss and Coosa river, damaging fisheries and local bait and tackle shops. *Id.* The damages suffered by commercial fishermen and owners of businesses that related to recreational use of the waters was not quantified. *Id.* at 74. However, as an indicator of the damage, in one year, the state of Alabama took in U.S.\$35,000 less from decreased sales of fishing licenses. *Id.* In Michigan, toxic chlorinated hydrocarbons in the groundwater led to concerns of mutagenic effects. *Id.* at 7. Trichloroethylene, found in domestic wells in the area, may cause mutations, along with other latent effects. *See id.* at 225. In addition, according to the New York State Department of Health, "[t]he sensitivity of the human reproductive process to toxic chemical exposure is well established. . . . It is also known that many chemicals are hazardous to the conceptus of lower animals, depending on dosage, route of administration and stage of gestation." LOVE CANAL, *supra* note 3, at 23. *See also* S. EPSTEIN & L. BROWN, *supra* note 3, at 26, 375 (impact of PCB's and their by-products on fertility).

145. H.R. 4813, *supra* note 11, sec. 202, § 1113(a)(1)(B).

146. *See, e.g.*, SIX CASE STUDIES, *supra* note 3, at 43 (income losses faced by victims of exposure).

147. *See Note, Toxic Substance Contamination, supra* note 127, at 68.

148. *See GOV'T OF JAPAN, supra* note 14, at 253.

The deterrent aspect of a nonbinding choice of remedies is less important, particularly in Class II regions,¹⁴⁹ where liable parties are identified and pay for the compensation of the victim directly.¹⁵⁰

The Japanese system, while allowing for recovery of uncompensated injuries and retaining the deterrent aspect of civil liability, has not resulted in an increase in litigation.¹⁵¹ In fact, most suits brought since the law's implementation have been against the government challenging the administration of cleanup programs, delays in compensation,¹⁵² or the appeals of uncertified plaintiffs.¹⁵³ Several factors may explain this result. First, the cultural norms of Japan stress consensus and generally inhibit disputes in court.¹⁵⁴

149. See *supra* notes 115-17 and accompanying text.

150. See GOV'T OF JAPAN, *supra* note 14, at 258.

151. See J. GRESSER & K. FUJIKURA, *supra* note 75, at 315.

152. In one of the early actions, 372 victims charged that the local government had been grossly negligent in processing applications for compensation. The court found for the plaintiffs. *Id.* at 314. In another suit, Minimata disease victims sued the government and private companies over plans for the cleanup of Minamata Bay. *Id.* In one major suit, 100 certified victims in Kawasaki filed suit for damages for health injury against the government and private and public corporations. Aronson, *supra* note 94, at 160 n.100. This litigation came after two other suits were brought by certified victims in the same Class I area. J. GRESSER & K. FUJIKURA, *supra* note 75, at 315. These were among the most publicized of the suits arising after implementation of the Japanese Law. *Id.* at 314.

153. Most other suits have been by uncertified victims challenging the certification process, particularly in Class II cases. See Aronson, *supra* note 94, at 166. For example, recent Class II litigation involves plaintiffs who were unsuccessful applicants for certification. *Id.* at 166 n.121. The plaintiffs were angered by the denial of certification: "The basic thrust of the litigation is to bypass (and attack) the Compensation Law's certification standards and procedures in Class II areas." *Id.* In Minimata in 1980, 85 plaintiffs, all uncertified as Minamata victims under the Japanese Law, sought to establish liability on the part of the prefectural and national governments for harm caused by their failure to regulate the polluter's discharge. *Id.* at 160 n.100. The plaintiffs named the polluter as a co-defendant. *Id.*

Despite the low incidence of litigation, the number of administrative appeals has increased. By the end of March 1977, uncertified claimants had filed eight Class I grievances and 41 Class II grievances with the Pollution-Relation Health Damage Compensation Grievance Board (the Grievance Board) and 154 victims of Minamata disease had appealed to the Director General of the Environment Agency. J. GRESSER & K. FUJIKURA, *supra* note 75, at 314. By the end of March 1982, the number of grievances had risen to 62 cases in Class I regions and 364 cases in Class II regions. QUALITY OF THE ENVIRONMENT, *supra* note 84, at 278. By the end of March 1982, 526 people from the Minamata Bay area had filed grievances with the Director General of the Environment Agency for review of the prefectural governor's decision of nonapplicability of the Japanese Law. *Id.* at 282.

154. See J. GRESSER & K. FUJIKURA, *supra* note 75, at 315. In parts of the Orient, litigation is frowned upon as a shameful last resort, the use of which signifies failure to settle by friendlier means. Riskin, *Mediation and Lawyers*, 43 OHIO ST. L.J. 29, 29 (1982). In

The purpose of the Japanese Law is to absorb grievances, not to facilitate court actions.¹⁵⁵ Second, the Japanese have used other political and nonjudicial devices to express grievances in environmental disputes.¹⁵⁶ Third, the structure of the Japanese Law does not encourage suits.¹⁵⁷ In Class I areas no specific polluter is identified. Thus, the requirement that firms pay a levy implicates all industries.¹⁵⁸ Unless a plaintiff sues under a theory of joint and several liability, he is often unable to identify a responsible party.¹⁵⁹ Bringing a suit would therefore be difficult. In Class II areas, the polluter is identified and pays the compensation, thereby limiting the deterrent effect of a civil remedy.¹⁶⁰ More importantly, the law may curtail litigation because it does not specify whether certification is admissible in later court actions.¹⁶¹ The courts may require the plaintiff to establish the causal relationship of exposure and injury without putting his or her certified status into evidence.¹⁶²

Oriental thought, lawsuits are selfish disruptions of the natural harmony of human affairs. *Id.* (discussing Asian law in general). *But see* Ramseyer, *Japan's Myth of Non-Litigiousness*, *NAT'L L.J.*, July 4, 1983, at 36, col. 1 (lack of litigation in Japan due to, among other reasons, dearth of lawyers and not national culture).

155. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 314. It has been noted that: Court trials are, by nature, conflictual processes in which plaintiffs and defendants fight, and in which one of them loses—case, money, and face. In a country where the desire for mutual respect and trust is so great, trials are socially disruptive, and it is not surprising that other ways have been devised to settle conflicts, or rather to suppress them. Thus, in passing the Pollution-Related Health Damage Compensation Law [Law No. 111 of 1973], the Government was not only trying to ensure that pollutees would be compensated more quickly, more fully and more surely than they would have been by the courts; the Government was also avoiding open conflicts.

ORG. FOR ECON. CO-OPERATION AND DEV., *ENVIRONMENTAL POLICIES IN JAPAN* 48-49 (1977) [hereinafter cited as OECD1].

156. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 315. On February 24, 1977, angry victims of Minamata disease occupied the Environment Agency offices to protest the government failure to provide effective compensation. *Id.* at 314. The use of these devices—demonstrations, sit-ins, and petitions—may stem from feelings of alienation from the officially authorized procedures of legal remedies. *Id.* at 315. For example, demonstrations, often violent, followed government decisions to build a new airport for Tokyo. Hase, *Japan's Growing Environmental Movement*, *ENV'T*, Mar. 1981, at 14, 20.

157. *See* Gresser, *supra* note 67, at 127-28.

158. *See* GOV'T OF JAPAN, *supra* note 14, at 254.

159. *See id.* ("no clear cut link between a polluter and the occurrence of a . . . disease").

160. *Id.* at 258. The deterrent is part of the system's cost allocation: the polluter pays for damages. *See infra* notes 207-08 and accompanying text.

161. *See* Gresser, *supra* note 67, at 110 n.78.

162. *Id.* at 110.

Also, because double recovery from collateral sources is not permitted under the Japanese Law,¹⁶³ there is no windfall recovery to use as a litigation fund. The victim is compensated primarily for out-of-pocket medical expenses¹⁶⁴ and disability¹⁶⁵ by the compensation system.

Despite the Japanese experience with nonexclusive remedies, the Proposed Bill raises the possibility of increased litigation.¹⁶⁶ For example, the short-term nature of the disability payment, lasting for only five years,¹⁶⁷ may necessitate that the victim eventually look elsewhere for compensation.¹⁶⁸ In addition, the low eligibility requirement for compensation in the administrative system¹⁶⁹ and the use of rebuttable presumptions in the federal cause of action¹⁷⁰ may encourage a victim compensated by the fund to seek additional compensation in the judicial system.

There are instances, however, where the structure of the Proposed Bill may inhibit litigation, in a fashion similar to the Japanese

163. See *supra* note 91-92 and accompanying text.

164. Law No. 111 of 1973, arts. 19-24 (Japan).

165. *Id.* arts. 25-28.

166. Certainly, the differences between the cultures and legal structures of the United States and Japan make a comparison on the issue of litigiousness tenuous. See Upham, *Litigation and Moral Consciousness in Japan: An Interpretative Analysis of Four Japanese Pollution Suits*, 10 *LAW & SOC'Y REV.* 579, 579-81 (1976).

167. H.R. 4813, sec. 202, § 1113(a)(1)(B), 98th Cong., 2d Sess. (1984).

168. In comparison, other fund proposals in the United States do not limit the disability payments. See H.R. 2582, 98th Cong., 1st Sess. sec. 101, § 9013(a) (1983) (compensation allowed is two-thirds of lost wages up to U.S.\$2,000 per month); S. 946, 98th Cong., 1st Sess. § 3 (1983) (also would allow two-thirds of lost wages up to U.S.\$2,000 per month); S. 917, 98th Cong., 1st Sess. § 5 (1983) (no limit). See also 301 (E) STUDY GROUP REPORT, *supra* note 36, at 234 (recommending two-thirds of lost wages up to U.S.\$2,000 per month); Soble, *supra* note 6, at 733-34 (no limit in proposed model statute). See also Model Statute § 206(e), (g) (1983) (Env'tl. L. Inst.), reprinted in Trauberman, *Toxic Torts*, *supra* note 6, at 265-66 (proposed model statute for compensating victims of hazardous substance pollution recommending payment amounts based on level of disability). But see H.R. 2482, 98th Cong., 1st Sess. § 307(a) (1983) (maximum aggregate award of U.S.\$50,000 in benefits).

169. See *supra* notes 58-61 and accompanying text.

170. H.R. 4813, sec. 402, § 1123, 98th Cong., 2d Sess. (1984). The 301(e) study group came out against the use of statutory rebuttable presumptions in plenary tort actions and felt that development of such presumptions should be left to state law. 301(E) STUDY GROUP REPORT, *supra* note 36, at 260. Both H.R. 2582, 98th Cong., 1st Sess. (1983), and the *Environmental Law Institute Model Statute*, allow rebuttable presumptions only in the "tier one" administrative compensation system. H.R. 2582, 98th Cong., 1st Sess. sec. 101, § 9014(b) (1983); Model Statute, *supra* note 168, §§ 205(c), § 301, reprinted in Trauberman, *Toxic Torts*, *supra* note 6, at 263-64, 287-89.

system. By barring double recovery,¹⁷¹ the law discourages a victim's "gambling" of the compensation award on a tort action.¹⁷² The Proposed Bill, moreover, bars the plaintiff from introducing the EPA administrator's finding that the plaintiff was eligible for compensation.¹⁷³ In addition, the Proposed Bill does not authorize the use of the same broad types of evidence in court that are available in the administrative hearing.¹⁷⁴ As a result, the Proposed Bill contains structural discouragements to unnecessary litigation.

Nonexclusive remedies should be allowed for victims of hazardous substance exposure in order to serve the goals of both compensation and deterrence. Despite fears of increased litigation in the United States, a system of nonexclusive remedies has not overwhelmed the Japanese courts with toxic tort litigation. Changing the Proposed Bill to extend the period of disability compensation and removing the rebuttable presumptions in the federal cause of action would reduce the limited statutory encouragement of toxic tort suits.

2. Damages Compensable

The types of damages for which compensation may be recovered is the second important factor of comparison. Under both the Japanese Law and the Proposed Bill, the administrative systems

171. The Proposed Bill bars collateral source recovery from public or private sources for the same injury. H.R. 4813, sec. 402, § 1132, 98th Cong., 2d Sess. (1984). Section 1132 provides that recoveries obtained from other administrative or court proceedings, settlements from any other government program, or from any insurance policy will be deducted from compensation awards from the administrative system or the courts. *Id.*

172. *See id.* § 1132(a). Thus, as in Japan, there are no windfalls or double recoveries allowed from collateral sources. *See id.* The award from the compensation fund would pay for out-of-pocket medical expenses, disability and relocation but not for litigation. *See supra* notes 52-54 and accompanying text. Furthermore, payment of claims under the administrative system entitles the United States government to a lien on any collateral recoveries. H.R. 4813, sec. 402, § 1132(b), 98th Cong., 2d Sess. (1984).

173. H.R. 4813, sec. 402, § 1123(a). Unlike the Japanese Law, which does not address the issue, *supra* note 161 and accompanying text, the Proposed Bill makes it clear that the plaintiff cannot use his or her status as a compensated victim as a sword in litigation. *See* H.R. 4813, sec. 402, § 1123(a), 98th Cong., 2d Sess. (1984). Consequently, the plaintiff receives no evidentiary benefit in court for his status as a compensated victim. The Proposed Bill, by the same provision, does not permit the defendant to introduce the results of any proceeding where the plaintiff was denied or granted eligibility. *Id.*

174. *Compare* H.R. 4813, sec. 402, § 1123, 98th Cong., 2d Sess. (1984) (judicial action) *with id.* sec. 202, § 1114(c) (administrative scheme). In the administrative system, victims are allowed to rely on scientific evidence that tends to show a correlation between exposure to a

compensate primarily for disability and all medical expenses.¹⁷⁵ However, only the United States proposal provides compensation for relocation costs.¹⁷⁶

Both systems are less than optimal from the compensatory standpoint, however, because they fail to compensate for property damage¹⁷⁷ and pain and suffering.¹⁷⁸ Although monetary assessment of these injuries would be difficult,¹⁷⁹ an adequate compensation scheme would take them into account.¹⁸⁰

If an administrative system provides an exclusive remedy, and does not compensate for these damages, the claimant will not be fully compensated for these damages. A schedule of payments¹⁸¹ for

hazardous substance and disease. *Id.* sec. 202, § 1114(c). Such a cause and effect showing through animal studies, tissue culture studies, micro-organism studies, and statistical (epidemiological) studies of incidence and disease is permitted to establish the victim's rebuttable presumption that the exposure could have caused the injury. *Id.*

175. *See id.* § 1113(a)(1)(A), (B); Law No. 111 of 1973, arts. 19-41 (Japan).

176. H.R. 4813, sec. 202, § 1113(a)(1)(C)(ii), 98th Cong., 2d Sess. (1984). The Japanese Law provides relocation costs only when required for medical reasons. *See* Law No. 111 of 1973, art. 46, para. 1 (Japan) (local officials may undertake programs for medical care in nonpolluted areas elsewhere). *See supra* note 101.

177. *See* Ginsberg & Weiss, *supra* note 6, at 937. The Japanese system does not provide for loss of earnings resulting from damage other than impaired health. J. SWAIGEN, *supra* note 12, at 71. There is no administrative compensation for destruction of property or loss of trade. *Id.* In Japan, the problem of contamination of crops and fisheries could be substantial. *See* J. GRESSER & K. FUJIKURA, *supra* note 75, at 295 (issue of property damage to farms and fisheries arose in drafting of Japanese Law).

178. *See Hearings on Victim's Compensation, supra* note 10, at 254. Such losses are hard to quantify. *See infra* note 179 and accompanying text. Nevertheless, as one witness at congressional victim's compensation hearings noted: "[T]he pain and suffering of a man dying of cancer or watching a child die of leukemia is not speculative or hypothetical." *Hearings on Victim's Compensation, supra* note 10, at 254 (testimony of A. Roisman, Esq.). *See also* Anderson, *The Case for Statutory Compensation*, ENVTL. F., Mar. 1983, at 24. In addition, Anderson supports compensation coverage for various forms of neuropathology and fear of future cancer or of transmission of genetic injury to future generations. *Id.* The argument for compensating fear of future cancer is a difficult one because cancer accounts for nearly 20% of the deaths in the United States. M. BROWN, *supra* note 3, at 329. Under this argument, people in contact with any carcinogen should be compensated. However, because so many hazardous substances have been linked to cancer, it is a definite consideration for people exposed to them. *See* S. EFSTEIN & L. BROWN, *supra* note 3, at 36.

179. *See* Anderson, *supra* note 178, at 25. *See also* O'Connell, *A Proposal to Abolish Defendants' Payment for Pain and Suffering in Return for Payment of Claimants' Attorneys' Fees*, 1981 U. ILL. L. REV. 333, 334 ("Setting a dollar value on nonpecuniary loss is an uncertain proposition.").

180. *See supra* note 135 and accompanying text.

181. *See* Anderson, *supra* note 178, at 24. Schedules for fund-financed payments of non-pecuniary losses would provide standardization of these payments. *See* Trauberman, *Toxic Torts, supra* note 6, at 244 n.433.

such damages, therefore, should be established. At the very least, the claimants should have access to a civil action for their recovery.¹⁸²

An additional problem with the Proposed Bill is that it limits compensation by allowing disability payments for a maximum period of five years.¹⁸³ Limiting relief to the short-term in this way may encourage victims to litigate to recover for excess damages thereafter. Compensation for a longer period might not only decrease the necessity to litigate but also would be more equitable to victims who are unable to litigate due to a lack of either resources or an identifiable and solvent defendant.¹⁸⁴

The Japanese system, while not specifying a limited time for payments, limits recovery to injuries included in the Class I and Class II designations.¹⁸⁵ This limitation fails to compensate for other forms of health damage that are related to pollution and hazardous substances,¹⁸⁶ such as cancer and other chronic diseases.¹⁸⁷

The Proposed Bill thus presents a better alternative. However, it should be changed to allow for long term disability and to provide a schedule for nonpecuniary damages.

3. Eligibility

The third critical factor of comparison is eligibility for compensation. Both the Japanese Law and the United States Proposed Bill reduce the plaintiff's burden of establishing causation.

In Japan, victims of designated diseases in designated areas must establish eligibility for compensation for pollution-related health damage by an examination before a local Health Damage

182. See *supra* notes 144-45 and accompanying text.

183. H.R. 4813, sec. 202, § 1113(a)(1)(B), 98th Cong., 2d Sess. (1984).

184. See 301(E) STUDY GROUP REPORT, *supra* note 36, at 65.

185. See *supra* note 82-86 and accompanying text.

186. The Japanese Law currently compensates victims in Class II only for the diseases resulting from exposure to mercury, cadmium, and arsenic. See *QUALITY OF THE ENVIRONMENT*, *supra* note 84, at 278-86. The Japanese Law compensates in Class I areas only for respiratory diseases resulting from exposure to air pollution. See *id.* at 278. The law does not currently compensate for carcinogenic exposures to dioxins or other toxic chemicals.

187. *Hearings on TSCA Amendments*, *supra* note 90, at 367 (testimony of J. Gresser). Since 1974, when the Japanese Law was implemented, see *QUALITY OF THE ENVIRONMENT*, *supra* note 84, at 273, there have been no designations of additional Class II regions. See *id.* at 278-80.

Certification Council.¹⁸⁸ Victims showing specific symptoms relating to the designated diseases are compensated.¹⁸⁹ The Japanese system, in Class I areas, requires identification of a disease associated with particular types of firms,¹⁹⁰ and in Class II, a disease associated with a specific polluter.¹⁹¹ The Japanese system diminishes the compensation goal because the injured party receives compensation only for certain diseases related to pollution sources in the designated areas.

While the Japanese system allows for expansion of the law to encompass more diseases, areas, and pollution sources,¹⁹² it currently limits the designations to certain types of water and air pollution in specified areas.¹⁹³ Any additions would require a political decision¹⁹⁴ which raises the problems of abuse of discretion and other political considerations.¹⁹⁵ A compensatory system, once enacted, should not make compensation dependent on political factors.¹⁹⁶

The Proposed Bill emphasizes compensation. It provides quick recovery by lowering the eligibility requirements for a wide range of potential diseases or injuries.¹⁹⁷ It also provides a greater poten-

188. Law No. 111 of 1973, arts. 4, 44-45 (Japan). The Council consists of medical and legal experts. *Id.* art. 45, para. 2. See Aronson, *supra* note 94, at 164 (council members evaluate medical and other data for each applicant to determine eligibility for certification).

189. See J. SWAIGEN, *supra* note 12, at 68. Adherence to symptoms is strict, particularly in Class II certifications. The problem of victims with aberrant symptoms being uncompensated has grown as cases with the most basic symptoms have already been compensated. J. GRESSER & K. FUJIKURA, *supra* note 75, at 293; Aronson, *supra* note 94, at 167.

190. Law No. 111 of 1973, art. 2, para. 1 (Japan).

191. *Id.* art. 2, para. 2. See Aronson, *supra* note 94, at 163.

192. Law No. 111 of 1973, art. 2 (Japan).

193. See *supra* notes 82-86 and accompanying text. Nor is it likely to be expanded. According to Professor Gresser:

[B]arring a new major pollution-related crisis, the Japanese Government will not expand the present system. No new substances or areas will be designated. There has been some discussion of cancer in relation to pollution. Should cancer be considered.

[sic] There is no chance in the world that cancer will be designated.

Hearings on TSCA Amendments, supra note 90, at 367 (testimony of J. Gresser).

194. Law No. 111 of 1973, art. 2 (Japan). "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." J. SWAIGEN, *supra* note 12, at 71.

195. J. SWAIGEN, *supra* note 12, at 71.

196. *Id.*

197. H.R. 4813, sec. 102, § 1101(3), 98th Cong., 2d Sess. (1984). The Proposed Bill defines physical injury or illness as any serious bodily injury or any other internal or external

tial of achieving the compensation goal than the Japanese system, because it does not require identifying specific pollution sources.

Under the Proposed Bill, the victim need show only that there is reasonable likelihood that exposure of the nature, scope, or magnitude he experienced caused the injury which is the basis of his claim.¹⁹⁸ This very low threshold, coupled with broad evidentiary allowances,¹⁹⁹ stresses compensation but may lead to overinclusivity by allowing recovery for sufferers of diseases resulting from heredity or diet.²⁰⁰ A requirement that the victim show a "high probability"²⁰¹ that exposure to hazardous substances caused or significantly contributed to the injury would raise the eligibility threshold high enough to prevent illegitimate claims.²⁰²

injury. It does not refer to any specific injury. *Id.* The range of substances defined as hazardous, for which the Proposed Bill provides compensation, is also broader than those substances currently compensable under the Japanese Law. *Id.* sec. 101(a), § 9001(12); see *supra* notes 82-86 and accompanying text.

198. *Id.* sec. 202, § 1114(b)(1).

199. *Id.* § 1114(c).

200. See Mosher, *supra* note 2, at 121 (Insurance and business groups in the United States have criticized the use of rebuttable presumptions and low thresholds of causation as leading to "automatic compensation.") See also Cheek Statement, *supra* note 139, at 5-7 (compensation funds could lead to "massive overinclusivity" and "national health insurance").

201. See H.R. 2582, 98th Cong., 1st Sess. sec. 101, § 9014(b)(1)(C) (1983).

202. The need to show high probability may lead, however, to problems of compensation. For example, if public health authorities had not yet produced health effects documents establishing the high probability of injury linked to exposure, had not yet collected other evidence (e.g., epidemiological studies), or if claimants had no access to this information or evidence, then claimants might not be able to meet the high probability standard for compensation. This possibility of noncompensation lends support to the argument that any administrative decision not be a final one. See Ginsberg & Weiss, *supra* note 6, at 939.

Any inclusivity of natural sufferers, or those who may have contracted the disease through other factors (e.g., heredity or diet), would be offset by underinclusivity of those who are legitimately injured but unaware of the exposure or the nexus between the injury and the exposure. *Id.* at 940. The result would balance overinclusivity and underinclusivity. Besides a claimant's ignorance or lack of access to evidence, or the fact that, in Japan particularly, claimants contracted unusual or less severe symptoms, claimants might not be compensated because of the overall limits of current etiology. See Gresser, *supra* note 67, at 121. Atypical disease patterns, for example, might not be acknowledged as stemming from exposure. *Id.* Even if causal proof is made easier by the administrative scheme in both countries, victims may still only recover for what is currently "known." The Proposed Bill allows greater leeway by not requiring certification of diseases or areas and by using broad definitions. See *supra* notes 54, 58-60 and accompanying text.

The scientific limitation on who may be compensated should also balance any overinclusivity caused by compensation of those deemed to be "natural sufferers." In Japan, the

4. Allocation of Costs

The final critical factor of analysis between the Japanese and United States solutions to hazardous substance compensation is the allocation of costs. The Japanese system ensures deterrence by having the polluter pay for the injuries he inflicts.²⁰³ However, the law neither deters efficiently nor compensates effectively. The law limits compensation to certain exposures and does not provide for complete internalization of costs. The Proposed Bill, which finances the fund mainly from oil and chemical taxes, stresses compensation.

In Class II areas under the Japanese system, the firm responsible for the pollution and the accompanying diseases makes the compensation payments.²⁰⁴ The diseases and the polluters responsible in Class II areas are identified, and victims could have sued such polluters directly.²⁰⁵ Although the claimant does not have to establish causation, the system in Class II is causation-based and firm-specific because the government is required to establish the relationship between the disease and the pollution.²⁰⁶

By placing the costs directly on the polluter, the Class II system resembles a traditional liability system and internalizes the costs of pollution.²⁰⁷ The system gives industries a financial incentive to exercise greater care, thereby avoiding responsibility for compensation payments.²⁰⁸ The internalization of costs is not complete, however, because government revenues pay for some of the costs as well as the administration of the system.²⁰⁹

The Class II system functions as a less burdensome, quicker mediator between the polluter and the victim than the traditional

likelihood of overinclusivity of natural sufferers is great in Class I areas, such as those victims with respiratory diseases from causes other than pollution. Aronson, *supra* note 94, at 163. On the other hand, Japan's system is also underinclusive because it does not compensate victims outside of designated areas who may be legitimate victims of exposure (through means other than having lived or worked in the area, such as through the air or in foodstuffs). Law No. 111 of 1973, art. 4 (Japan); J. GRESSER & K. FUJIKURA, *supra* note 75, at 307.

203. Law No. 111 of 1973, arts. 52, 62 (Japan).

204. See *supra* notes 115-16 and accompanying text.

205. See GOV'T OF JAPAN, *supra* note 14, at 243.

206. See Law No. 111 of 1973, art. 2, para 2 (Japan).

207. See Gresser, *supra* note 67, at 128.

208. Comment, *Compensating Hazardous Waste Victims*, *supra* note 125, at 695. Profits are maximized by avoiding accidents and injuries. *Id.*

209. See *supra* notes 119-20 and accompanying text.

court system.²¹⁰ The result is lower transaction costs.²¹¹ Nevertheless, the fact that the system ties payments to specific firms and to specific diseases and symptoms limits the compensatory power of the system and may prevent benefits from reaching victims of diseases from other exposures to hazardous substances.²¹²

In Class I areas, the allocation of costs is less causation-based and less firm-specific than in Class II areas.²¹³ There is a general collective responsibility among all sulfur dioxide emitting industries.²¹⁴ Payments are based on a levy tied to the amount of sulfur dioxide emissions.²¹⁵ The levy partially meets the deterrent goal by requiring polluters to pay, thereby creating an incentive to reduce emissions.²¹⁶ The levy system also partially meets the compensation goal because it does not tie the rate of the levy to air quality standards, but to the amount of compensation required by the number of certified victims.²¹⁷

210. Gresser, *supra* note 67, at 119. The Japanese Law removes the delays and uncertainties of earlier judicial and administrative remedies. *Id.* However, the certification process is lengthy for Minamata victims in Kumamoto province. The waiting list for certification contained 2600 applicants in August 1974 under the 1969 Law Concerning Special Measures for the Relief of Pollution Related Patients, Law No. 90 of 1969 (Japan). ENVIRONMENT SUMMARY, *supra* note 4, at 80. By the end of March 1982, that number had swelled to 4697. QUALITY OF THE ENVIRONMENT, *supra* note 84, at 282. In February 1979, the Japanese government enacted the Special Law Concerning Promotion of Certification of Minamata Disease, Law No. 104 of 1978 (Japan), which allowed those applicants for compensation under the Japanese Law, who had not received certification, to apply directly to the Director General of the Environment Agency for relief. QUALITY OF THE ENVIRONMENT, *supra* note 84, at 281.

211. By eliminating lengthy court trials and removing the victim's burden of establishing causation, the Japanese Law reduces transaction costs. *See supra* note 9. Minimizing transaction cost leads to lower aggregate social costs and greater economic efficiency. Trauberman, *Toxic Torts*, *supra* note 6, at 207.

212. As one commentator points out, other pollutants were also present in Class II areas. Aronson, *supra* note 94, at 167 n.126. The Japanese system fails to account for the possible effects of exposure to a number of pollutants. *Id.* Pollution from hazardous waste landfills or hazardous waste spills would have to be designated first. The Japanese system has not yet addressed multiple source pollution Class II areas. *See id.* at 167. In addition, the Japanese limitation on areas and sources of pollution may actually inhibit deterrence among the larger group of polluters. A limited payment system, therefore, limits the number of affected polluters. *See Gresser, supra* note 67, at 127.

213. GOV'T OF JAPAN, *supra* note 14, at 245.

214. OECD1, *supra* note 155, at 45.

215. *See supra* note 113 and accompanying text.

216. OECD1, *supra* note 155, at 47.

217. *See Aronson, supra* note 94, at 155-56.

The mixed system in Class I has led to several problems. First, while the system is tied to the amount of hazardous emissions and operates as somewhat of a deterrent and a means of internalization, the effect of the law on ambient air quality is unclear. Although sulfur dioxide emissions have decreased,²¹⁸ other factors such as an economic recession and regulatory standards enacted before the compensation scheme²¹⁹ have been cited as more likely explanations for this improvement.²²⁰

A second problem is that due to a backlog of claims for certification the levy rate has increased despite decreasing emissions. This fact, as well as the inefficiency of tying present levy rates to the effects of past pollution,²²¹ undermines the deterrent goal. A financial incentive to decrease pollution requires that the levy decrease as pollution decreases.

Third, the system in Class I areas has economically inefficient consequences that run counter to the goals of deterrence and cost internalization. The levy operates on a linear scale. The amount the firm must pay rises with emissions, but damages may in fact rise exponentially.²²² Damages caused by the larger polluters may be greater than the levy reflects.²²³ As a result, larger firms might be paying less than the harm they caused would require. Smaller firms would, in effect, be subsidizing larger ones. Firms within a designated area are levied at an average rate nine times that of firms outside the area although firms outside may cause more harm than those within the area.²²⁴ Moreover, industries emitting sulfur dioxide account for 80% of the fund's revenues, while car owners pay 20% through an automobile weight tax.²²⁵ Nevertheless, in certain

218. Japan has dramatically reduced its air pollution due to sulfur dioxide. *Id.* at 157. The greatest reductions occurred in the early 1970's and the levy was not in effect until 1974. *Id.*

219. See, e.g., Water Pollution Control Law, Law No. 138 of 1970 (Japan); Air Pollution Control Law, Law No. 97 of 1968 (Japan).

220. See F. ANDERSON & A. KNEESE, *supra* note 12, at 51; Aronson, *supra* note 94, at 157-58.

221. Critics regarded the practice of charging current polluters to pay for the effects of past harm as unfair and inefficient. J. GRESSER & K. FUJIKURA, *supra* note 75, at 299. The government disagreed, arguing that many of the levied firms had been operating for a long time and present polluters were exposing the public to the same level of risk. *Id.*

222. See Gresser, *supra* note 67, at 125.

223. See *id.* at 125 n.137.

224. J. GRESSER & K. FUJIKURA, *supra* note 75, at 303.

225. GOV'T OF JAPAN, *supra* note 14, at 256.

areas, mobile polluters may be more pervasive and more harmful than stationary sources.²²⁶ Finally, the levy, primarily for convenience of administration, is tied to sulfur dioxide emissions only.²²⁷ There is no levy against other harmful pollutants causing respiratory diseases. These results are economically inequitable as sulfur dioxide polluters may be paying for damages that are the responsibility of others.

Fourth, the law limits the deterrent aspect in Class I areas by linking the levy primarily to the amount of compensation needed rather than to the amount of pollution caused.²²⁸ Commentators do not consider the levy a traditional pollution charge, but rather a redistributive charge.²²⁹ The levy's primary goal is to finance compensation—not to achieve a reduction in emissions.

Finally, as in Class II areas, the internalization of costs is deficient in Class I.²³⁰ The polluter does not bear the full cost of the pollution: the government absorbs some costs.²³¹ In addition, the fact that only disability and medical costs are compensated minimizes the internalization of costs by the polluters.²³² Despite these problems, Class I of the Japanese system attempts to impose the costs of pollution on the polluting source to a greater extent than the Proposed Bill.

The Proposed Bill uses the reauthorized Superfund mechanism for its financing. The Superfund legislation taxes crude oil, chemicals and hazardous wastes at the disposal site.²³³ The charges on chemicals and oil account for the bulk of the fund's revenue.²³⁴

226. The Government of Japan estimated that the amount of sulfur dioxide emanating from stationary sources is 94% of the total sulfur dioxide present in the air. The remainder emanates from mobile sources. *Id.* at 255 (Table 6-2). But the adjusted ratio when nitrogen oxide is added makes the amount of pollution in the air emanating from stationary sources 80% of the total pollution. *Id.* Even if the ratio correctly reflects the relative contribution of stationary and mobile sources to the sulfur dioxide pollution nationwide, this does not mean that the resulting damage from the pollution reflects this proportion. J. GRESSER & K. FUJIKURA, *supra* note 75, at 303.

227. See GOV'T OF JAPAN, *supra* note 14, at 257.

228. See *supra* note 217 and accompanying text.

229. Aronson, *supra* note 94, at 155; ORG. FOR ECON. CO-OPERATION AND DEV., POLLUTION CHARGES: AN ASSESSMENT 10-11 (1976) [hereinafter cited as OECD2].

230. See *supra* notes 117-20 and accompanying text.

231. *Id.*

232. The victim would absorb the costs of damages not compensated. See *supra* notes 177-78 and accompanying text.

233. See *supra* notes 64-65 and accompanying text.

234. H.R. 4813, secs. 301-303, 321-323, 98th Cong., 2d Sess. (1984). The Proposed Bill also authorizes federal appropriations in the amount of U.S. \$225,000,000 for the first three

The chemical and oil industries are collectively responsible for financing the fund. Individual firms are not responsible; the non-polluter pays along with the polluter. These firms produce the raw materials used in many of the processes that generate hazardous wastes and substances.²³⁵ There is no deterrence because the levies are imposed on the industry as a whole, rather than on those responsible for the damages. Consequently "clean" or nonpolluting generators of hazardous wastes are penalized as much as "dirty" or polluting ones.²³⁶

The Proposed Bill does achieve some cost internalization by linking fund payments to the sources of hazardous wastes. This feature shifts the costs from the innocent victims to industries that create sources of pollution.²³⁷ Without a firm-specific allocation, however, the result is no more than a redistributive revenue-raising measure.²³⁸ There is no relation between cost allocation and abatement. As several commentators have noted, this cost spreading among firms, clean and dirty, may reduce the amount of hazardous waste produced but not necessarily its toxicity or the potential for improper disposal.²³⁹

fiscal years and in an amount equivalent to 12.5% of all revenues generated during the second fiscal year. *Id.* sec. 201, § 9021(b)(2). The government thereby absorbs some costs.

235. See SUPERFUND CONCEPT, *supra* note 6, at 102. Some feedstocks are hazardous when spilled or improperly disposed. *Id.*

236. See *id.*

237. See 301(E) STUDY GROUP REPORT, *supra* note 36, at 248. There seems to be an inverse correlation between socio-economic status and proximity to hazardous substances and conditions. Remarks of Leslie Cheek, III, Conference on the New EPA 11 (Sept. 27, 1983) (available from Crum & Foster Ins. Cos., Washington, D.C.). Consequently, having the public or customers who benefit from the use of chemicals bear the costs of injuries rather than the victims who are less likely to be able to bear them spreads the social costs more equitably.

238. See OECD2, *supra* note 229, at 10.

239. See Ginsberg & Weiss, *supra* note 6, at 930; Note, *Allocating the Costs of Hazardous Waste*, *supra* note 9, at 598 n.63. The elimination of individual firm liability also eliminates the incentive to reduce costs of liability by the use of safer methods. Note, *Toxic Substance Contamination*, *supra* note 127, at 68-69. The taxation of hazardous wastes at the disposal site might be successful at achieving deterrence and internalization although it does not seem to be tied to any level of toxicity or risk. See H.R. 4813, secs. 331-333, 98th Cong., 2d Sess. (1984). Without strict enforcement, it might lead to improper disposal or illegal "midnight dumping" of hazardous wastes. Ginsberg & Weiss, *supra* note 6, at 934.

Critics have attacked the Superfund approach to financing as leading to many social costs such as loss of export markets by the chemical industry, adverse balance of payment, and unfavorable unemployment consequences. See G. Freeman, Jr., *Toxic Torts, Hazardous Wastes, and the Superfund 41* (Oct. 19-20, 1983) (paper delivered at the Sixth Annual

Adequate compensation for hazardous substance injuries necessitates minimization of deterrence. Making deterrence part of a compensation system would require allocating responsibility to specific firms as in traditional tort actions. The difficulties of establishing firm-specific responsibility for hazardous substance pollution would be the same as under current law.²⁴⁰ The alternatives would be to create a limited compensation system like the Class II system in Japan or to continue the inadequate common law system. Such alternatives prevent satisfactory compensation by limiting awards to those who sustain the burden of proving causation.

It is not currently possible to tie levies to a firm-specific level of risk.²⁴¹ Faced with this obstacle and a need to stress compensation, the Proposed Bill leaves deterrence and firm-specific liability to plenary actions by a victim. Vigorous enforcement of direct regulations and standards accomplishes deterrence.²⁴² Direct regulation has always been more popular in the United States than the "polluter pays" theory of liability.²⁴³ The Proposed Bill reflects a pru-

Conference, National Legal Center for the Public Interest). However, the costs of injury should be carried by the industry that creates them because it is unfair to burden the innocent victim with these costs and because efforts to reduce the costs will ultimately benefit the public. See 301(E) STUDY GROUP REPORT, *supra* note 36, at 248.

240. See *supra* notes 25-28 and accompanying text.

241. See Ginsberg & Weiss, *supra* note 6, at 934 n.313. Accurate risk assessment, or requiring fund contributors to make payments based on the magnitude of the risk caused by the substances they manufacture, again, requires more scientific knowledge of the effect of substances on human health than currently exists. See Abraham, *supra* note 17, at 127. As more etiological studies are conducted, risk assessment may be more viable. For an analysis of the use of risk assessment in this field, see Note, *Toxic Substance Contamination*, *supra* note 127, at 53.

242. See, e.g., Toxic Substances Control Act, 15 U.S.C. §§ 2601-2629 (1976 & Supp. V 1981) (regulates marketing of toxic substances); Clean Water Act, 33 U.S.C. §§ 1251-1376 (1976 & Supp. V 1981) (regulates water quality); Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6987 (1976 & Supp. V 1981) (regulates disposal of hazardous wastes); Clean Air Act, 42 U.S.C. §§ 7401-7642 (1976 & Supp. V 1981) (regulates air quality). Japan is also dependent on regulations and emission standards which may explain some of the country's tolerance for the mixed system described in this Note. Behavior modification through economic incentives is coupled with strict regulatory enforcement. See *generally* QUALITY OF THE ENVIRONMENT, *supra* note 84, at 118-272 (discussing anti-pollution measures enacted); J. GRESSER & K. FUJIKURA, *supra* note 73, at 229-79 (discussing regulatory process and standards); OECD1, *supra* note 155, at 16-36 (pollution control by standards); Irwin, *Toxic Substances Laws and Enforcement*, 40 RABELS ZEITSCHRIFT FÜR AUSLÄNDISCHES UND INTERNATIONALES PRIVATRECHT 474, 475-78 (1976) (discussing Japanese law regulating hazardous substances).

243. Gresser, *supra* note 67, at 121.

dent unwillingness to experiment with economic solutions when injuries from hazardous substances are at issue.²⁴⁴

CONCLUSION

Compensation of victims of exposure to hazardous substances is a major issue before the United States Congress. Because of the inadequacies of common law actions, an administrative compensation system has been proposed to reduce the problems facing victims. The Japanese have used an administrative system of compensation for the past ten years. A comparison of the United States and Japanese methods of solving this problem emphasizes the difficulties of creating a system that both compensates victims and deters injurious behavior. The Proposed Bill manifests an understanding of this difficulty by its emphasis of the compensation goal. The proposed legislation, with the minor alterations suggested above, should be adopted as law.²⁴⁵

David E. Bronston

244. See A. KNEESE & C. SCHULTZE, *POLLUTION, PRICES AND PUBLIC POLICY* 107 (1975). See also Abraham, *supra* note 17, at 148 (compensation funds in toxic tort field should stress compensation; direct governmental regulation is preferable for abating injurious behavior).

245. At the time of publication, the Proposed Bill was defeated in the House Subcommittee on Commerce, Transportation and Tourism by a 5-4 vote. Telephone interview with Chris Harris, aide to Congressman Florio (Apr. 6, 1984).