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THE PUBLIC AND PRIVATE LAW DIMENSIONS OF THE UFFI PROBLEM: PART I*

David Cohen†

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1. Introduction

On December 22, 1980, the Minister of Consumer and Corporate Affairs, acting pursuant to the Hazardous Products Act,¹ banned the sale of "Urea Formaldehyde based thermal insulation, foamed in place, used to insulate buildings."² Three years earlier, in June, 1977, the Minister of State for Urban Affairs had announced a 1.4 billion dollar home insulation programme designed to encourage Canadian homeowners to conserve energy through the retrofitting of residential homes³ — formaldehyde insulation was included in the programme by the Central Mortgage and Housing Corporation.⁴ Some months previously, a subsidiary of the Canada Development Corporation

* Part II of the paper, as well as Comments on the paper by Michael J. Trebilcock and Andrew J. Roman, will appear in the next issue of the Journal.

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¹ R.S.C. 1970, c. H-3 as amended.

² See SOR/81-30, *Can. Gaz. Part II*, Vol. 115, No. 1, p. 80.

³ See, *infra*, Part II.

⁴ *Ibid.*

had purchased 100% of the common shares of Rapco Foam Incorporated, a company engaged in the manufacture and distribution of urea formaldehyde foam insulation components.⁵ In 1976, a complaint had been filed by the Metropolitan Denver District Attorney's Consumer Office⁶ under s. 10 of the Consumer Product Safety Act⁷ requesting the Consumer Product Safety Commission to develop a standard under s. 7 of the Act, for certain home insulation products including urea formaldehyde foam insulation. In 1974, Canadian patents for Insulspray and for a foaming apparatus to apply foam insulation were granted to Borden Products Limited, Canada.⁸ In 1970 the Central Mortgage and Housing Corporation had requested the Canadian Government Specifications Board to develop a product standard for urea formaldehyde insulation.⁹

Urea formaldehyde foam insulation (UFFI) is an insulating material commonly used to insulate existing residential and commercial buildings. It is manufactured on site, and is usually injected into the interstitial wall cavities through holes drilled in the outside wall. The product is produced by mixing a resin, foaming agent and compressed air, and pumping the resulting mixture into the wall cavities. The foam is intended to have the consistency of shaving cream when first produced, but begins to set almost immediately. The curing process may take several weeks.¹⁰

During the 10 years prior to the ban, perhaps 80,000 Canadians insulated their homes with the insulation.¹¹ This group of individuals comprises the class which has been most directly affected as a result of the use of the insulation. A Canadian

⁵ Canada Development Corporation, *Annual Report* (1976), at p. 6.

⁶ Consumer Product Safety Commission, Ban of Urea Formaldehyde Foam Insulation, Withdrawal of Proposed Information Labelling Rule, and Denial of Petition to Issue a Standard, *Federal Register*, Vol. 47, No. 64, 14366 at 14367.

⁷ 15 U.S.C. 2059.

⁸ Canadian Patent, Urea Formaldehyde Foam, No. 1013499; Canadian Patent, Foaming Apparatus, No. 1014193, both granted to Borden Products Limited, Canada.

⁹ SOR/78-241, *Can. Gaz. Part II*, Vol. 112, No. 6, p. 1032.

¹⁰ This description is taken from the Consumer Product Safety Commission, *supra*, footnote 6 at 14366; see also C. Shirtliffe, A. Bowles, "Development of a Canadian Standard for Urea Formaldehyde Thermal Wall Insulation", in *Thermal Insulation Performance*, A.S.T.M. Special Technical Publication 718 (1978), at p. 361. In the latter paper, the authors point out that there are two types of material systems sold in Canada. For the purposes of legal analysis the description in the text is sufficient.

¹¹ This figure is a "best estimate".

expert advisory committee on formaldehyde, and the federal Consumer Product Safety Commission in the United States concluded that individuals exposed to the foam environment may suffer acute and chronic irritant reactions, chronic allergic reactions and perhaps general chemical sensitization.¹² None the less, it seems that a substantial majority of homeowners cannot point to, or perhaps prove, existing personal injuries, adverse health effects or physical property damage to their homes which are causally related to the presence of foam insulation. The loss suffered by these persons represented by the decrease in the value of their homes may be referred to as *abstract* economic loss. The dissemination of information across the market, perhaps coupled with the apparent technological infeasibility of distinguishing "safer" homes from "less safe" homes,¹³ has resulted in a marked stigmatic effect which is reflected in a devaluation of all homes. As well, the devaluation has not been discounted by the probability of the risk materializing.¹⁴ The loss is abstract in so far as it is not related to a demonstrable defect which has manifested itself in a particular home. Consequently, the class of potential plaintiffs includes the vast majority of foam insulation purchasers who are seeking compensation either for the reduced market value of their homes (*i.e.*, abstract consequential economic loss), or alternatively, for the cost of repair. This, as is well known, may

¹² The medical research and conclusions to date may be found in several sources. See N. P. Drago, J. G. Pruett and S. G. Winslow, "Health Aspects of Urea-Formaldehyde Compounds, A Selected Bibliography with Abstracts 1964-1980", Toxicology Information Response Center (December, 1980); Department of National Health and Welfare, Expert Advisory Committee on Urea-Formaldehyde Foam Insulation, *Final Report* (1981); Kurzman, Shapiro and Monahan, *Formaldehyde Bibliography Outline* (April, 1981); B. M. Small, *Chemical Susceptibility and Urea-Formaldehyde Foam Insulation* (1982); J. Day, *Report on Certain Health Hazards Associated with Urea Formaldehyde Foam Insulation*, Exhibit 13, Hazardous Products Board of Review, Urea Formaldehyde Foam Insulation; Consumer Product Safety Commission, *supra*, footnote 6 at 14369-92, and Appendices A and C. This perception has been confirmed in the House of Commons, *Report on Urea Formaldehyde Foam Insulation*, Standing Committee on Health, Welfare and Social Affairs (December, 1982), at paras. 59-99.

¹³ The reliability of testing procedures for formaldehyde gas is open to debate. See Consumer Product Safety Commission, *supra*, footnote 6 at 14382-85; Small, *supra*, footnote 12 at p. 18; D. Williams, R. Otson and P. Bothwell, "Formaldehyde Levels in the Air of Homes Containing Urea-Formaldehyde Foam Insulation", 72 Can. J. of Pub. Health 331 (1981), at p. 334; C. Shirtliffe, *Report*, Exhibit 22, Hazardous Products Board of Review, Urea Formaldehyde Foam Insulation.

¹⁴ See Consumer Product Safety Commission, *supra*, footnote 6 at 14395.

present considerable difficulties in an action for recovery of compensation in a negligence suit.¹⁵

The parties to whom these homeowners may look for compensation include several manufacturers of the chemicals from which formaldehyde foam insulation is manufactured on site. These manufacturers did not, however, manufacture a consumer product. The possible claim that the loss was caused by a design defect in the insulation *product*, must be reformulated as a claim that the manufacturing *process* was defectively designed. The chemical component manufacturers had designed and patented¹⁶ a manufacturing process which they transferred, together with the component chemicals, to hundreds of manufacturers who manufactured the consumer product on site. The design defect, if it exists at all, is inherent in the process which resulted in the presence of foam insulation in the walls of the home.¹⁷

In addition to the possibility of process design negligence, it may be possible to argue that the chemical component manufacturers are liable in failing to disclose the risks that the foam might not perform as expected. The duty-to-warn allegation is, however, complicated by the fact that the potential defendants did not manufacture a consumer product which could be labelled, or which could be accompanied by "package insert" instructional material. The duty to warn must be imposed on a *component* manufacturer which raises both doctrinal and conceptual difficulties.¹⁸

Finally, it may be possible to develop a strict products liability trade practice action in several provinces, which establishes non-disclosure of risks and marketing conduct as deceptive or unfair acts in so far as these activities may have led to consumer misperception about the quality or performance characteristics of the product.¹⁹ Trade practice legislation has not generally been considered to be an effective products liability weapon. It appears, however, that the abrogation of the privity doctrine, the imposition of strict or absolute liability, and the conceptualization of the product defect as consumer misperception of safety, may

¹⁵ Recovery of economic loss in tort as it applies to the UFFI case is discussed, *infra*, at pp. 359-73.

¹⁶ See *supra*, footnote 8.

¹⁷ The review of design defects is discussed, *infra*, at pp. 315-16.

¹⁸ See *infra*, at pp. 326-36.

¹⁹ The development of a strict products liability trade practice action is discussed, *infra*, at pp. 351-9.

permit the legislation, in several provinces at least, to be employed as a strict products liability act.

Another potential argument of homeowners may focus on the implied contractual obligations of foam installers. The installation contract, whether viewed as a service or sales contract, will normally be considered as including the implied conditions that the goods transferred will be of merchantable quality and reasonably fit for its intended purposes. The application of these conditions to the formaldehyde problem must involve an analysis of the liability of a product supplier when, as is common in the urea formaldehyde case, the specific product sold is functioning adequately, and is not demonstrably defective. The product is, however, valueless, and the residential home into which it is installed may be significantly devalued. The loss, of course, is due to the market perception of risk, and the technological inability to distinguish "safer" from "less safe" homes.²⁰

The issue of potential governmental liability is possibly the most complicated of the legal aspects of the formaldehyde problem. A meaningful factual description of the governmental activity in this area over 10 years is necessarily complex.²¹ Briefly, a Crown corporation, the then Central Mortgage and Housing Corporation (C.M.H.C.) was given authority pursuant to regulations enacted under appropriation legislation²² to pay out money to purchasers of insulation products which the corporation had "accepted". The corporation apparently decided to accept those products which met a manufacturing standard established by the Canadian Government Specifications Board,²³ (now the Canadian General Standards Board (C.G.S.B.)) and which also met certain additional requirements established by C.M.H.C. itself.²⁴ The Board ratified a standard which was formulated on the basis of industry research data, by a working committee one-third of whose membership was drawn from industry. Another Crown corporation, the National Research Council, provided

²⁰ The analysis of potential contract claims is reviewed, *infra*, at pp. 336-51.

²¹ Space does not permit a complete description of an exceedingly complex issue. A comprehensive paper describing governmental activities in relation to urea formaldehyde foam insulation is on file at the Faculty of Law, University of British Columbia.

²² Appropriation Act, No. 3, S.C. 1977-78, c. 2, Urban Affairs Vote 11a. Canadian Home Insulation Regulations SOR/78-241, *Can. Gaz. Part II*, Vol. 112, No. 6, p. 1032.

²³ See Shirtliffe and Bowles, *supra*, footnote 10 at p. 361.

²⁴ See *Report on Urea Formaldehyde Foam Insulation*, *supra*, footnote 12 at para. 48.

technical advice to the C.G.S.B. committee and to C.M.H.C. The Department of Energy, Mines and Resources, which developed the retrofit programme, and which was responsible for the government information programmes pursuant to which information relating to insulation was disseminated to the public, argued against the adoption of a formaldehyde insulation standard. Its view did not apparently prevail, as financial and product choice authority over the programme had been delegated to C.M.H.C.

The question of governmental liability for the activities of the individuals acting in the C.G.S.B. under the Department of Supply and Services Act,²⁵ for the decisions of the individuals acting in the Office of Energy Conservation in the Department of Energy, Mines and Resources, for the acts of C.M.H.C. as a Crown corporation, perhaps acting as an agent of the Crown, and for the acts of the National Research Council also acting as a Crown agent, will depend upon an initial determination that those individuals or corporations owed a private legal duty of care to individual members of the public. That decision, it seems, will involve the court in drawing an entirely artificial line between "policy" decisions which are beyond the scope of judicial review, and "operational" decisions which will be subjected to judicial scrutiny.²⁶

The subject of this paper, then, is the private and public law dimensions of the formaldehyde problem. The topics which I have chosen to discuss are directly relevant to any inquiry into the nature of the bureaucratic and entrepreneurial processes which together created the UFFI problem. My concern is not to fix blame, and I have chosen not to draw conclusions in respect of the doctrinal and policy issues which I discuss. Rather, I have attempted to describe the regulatory process which was associated with the development of the product, and to discuss the role of the courts in reviewing alleged bureaucratic incompetence. As well, I have chosen to analyze several "private law" issues which I consider demonstrate the quite unique, and in some ways intractable, analytical, doctrinal and practical issues raised in the UFFI cases.

²⁵ R.S.C. 1970, c. S-18, s. 8.

²⁶ See *Public Law Dimensions*, *infra*, Part II.

2. Private Law Dimensions

The urea formaldehyde industry in Canada has been dominated by two major chemical component manufacturers²⁷ who between them controlled 90% of the Canadian market.²⁸ These companies had obtained patents in respect of the manufacturing process and production of urea formaldehyde foam insulation, and in respect of the equipment used in the production process.²⁹ Generally, these companies sold the component chemicals from which the foam is produced to local contractors, who numbered in the hundreds³⁰ by the date of the product ban in 1980. The contracts between the chemical component manufacturers and the contractors provided the latter with a licence to use the patented manufacturing process, and required some limited training of the latter's employees.

An analysis of the legal liability of component chemical manufacturers and contractors focuses on four quite distinct issues. First, were the component manufacturers legally responsible for the design of a defective consumer product? Second, were the manufacturers or installers liable for failing to warn consumers of the risks associated with formaldehyde foam insulation? Third, were the installers liable for damages resulting from breaches of the implied conditions of merchantability and fitness for purpose? Fourth, were the manufacturers or installers liable under trade practice legislation for misrepresenting or failing to disclose information regarding the safety and performance characteristics of their products?

(1) Design Defects

The manufacturers' responsibility for the design of urea formaldehyde foam insulation will depend either on a determination that the foam insulation is an "unreasonably dangerous" product, or alternatively, that the manufacturer failed to take reasonable care in designing the product. The concept of an unreasonably dangerous product is taken from the American

²⁷ See *Canadian Plastics*, October, 1980, at p. 38.

²⁸ See *Financial Post*, October 24, 1981, at p. 33.

²⁹ See, *supra*, footnote 8.

³⁰ See *Globe and Mail*, December 20, 1980, at p. 4; Hazardous Products Board of Review, *Testimony of Proceedings*, Vol. 24, at pp. 157, 169.

experience with design defects under Article 402A of the *Restatement of Torts (Second)*. While the section apparently establishes strict product liability, its application in design defect cases will in many instances return the court to a negligence formula.³¹ The distinction between negligence and strict liability becomes difficult to formulate in a design defect case, and accordingly, the strict liability American case law may be applicable to a discussion of negligent design at least in Canada.³² American courts have developed two principal tests to determine whether a product has been defectively designed: a "consumer expectation" test and the application of risk-benefit analysis. The consumer expectation test, which has its historical and conceptual foundation in contract law,³³ asks whether a consumer could reasonably expect the product to have the characteristics and qualities which allegedly constitute the product as "defective". If the answer is yes, then the product would not be unreasonably dangerous and defective.³⁴ Most commentators view the use of this contractual anachronism as inappropriate in the case of products liability actions in connection with injuries suffered by non-purchasers and bystanders, by pre-literate children who may not have created expectations, by unsophisticated consumers,

³¹ The introduction of a requirement of "unreasonable danger" in the *Restatement* has been criticized in so far as it may be taken as introducing negligence considerations into what was intended to be a strict liability concept. See *Cronin v. J.B.E. Corp.*, 501 P. 2d 1153 (1972); *Barker v. Lull Engineering Co.*, 573 P. 2d 443 (1978). See also F. J. Vandall, "Design Defect" in "Products Liability: Rethinking Negligence and Strict Liability", 43 Ohio State L.J. 61 (1982), at pp. 72-4; Keeton, "Products Liability — Design Hazards and the Meaning of Defect", 10 Cum.L. Rev. 293 (1979), at pp. 314-15; Keeton, "Product Liability and the Meaning of Defect", 5 St. M. L.J. 30 (1973); Hoenig, "Product Designs and Strict Tort Liability: Is there a Better Approach", 8 Sw.U.L.Rev. 109 (1976), at pp. 123-4 and 136-7.

³² See J. A. Henderson, "Renewed Judicial Controversy Over Defective Product Design: Toward the Preservation of an Emerging Consensus", 63 Minn. L.Rev. 773 (1979), at pp. 777-8; W. Kimble and R. O. Leshner, *Products Liability* (1979), at p. 83.

³³ See M.D. Bernacchi, "A Behavioral Model for Imposing Strict Liability in Tort: The Importance of Analyzing Product Performance in Relation to Consumer Expectation and Frustration", 47 Cinc. L.Rev. 43 (1978), at pp. 46, 47; J. Wade, "On the Nature of Strict Tort Liability for Products", 44 Miss. L.J. 825 (1973), at pp. 833-4.

³⁴ *Vincer v. Esther Williams All-Aluminum Swimming Pool Co.*, 230 N.W.2d 794 (1975), at p. 798. It is similar to the strict liability test recommended in the Ontario Law Reform Commission *Report on Products Liability* (1979):

"defective product" means a product that falls short of the standard that may reasonably be expected of it in all the circumstances. [See Draft Bill, s. 1.]

It is not clear whether this incorporates a subjective or objective test; or even if the issue is one of judicial or consumer expectation.

and by users who do not have the necessary information to assess product risk.³⁵

A quite different approach is to attempt to formulate rules describing the level of danger which we, as a society, are willing to accept in the products which we, as individuals, use, consume or are exposed to:³⁶

- (1) The usefulness and desirability of the product — its utility to the user and to the public as a whole.
- (2) The safety aspects of the product — the likelihood that it will cause injury, and the probable seriousness of the injury.
- (3) The availability of a substitute product which would meet the same need and not be as unsafe.
- (4) The manufacturer's ability to eliminate the unsafe character of the product without impairing its usefulness or making it too expensive to maintain its utility.
- (5) The users' ability to avoid danger by the exercise of care in the use of the product.
- (6) The users' anticipated awareness of the dangers inherent in the product and their avoidability, because of general public knowledge of the obvious condition of the product, or of the existence of suitable warnings or instructions.
- (7) The feasibility on the part of the manufacturer of spreading the loss by setting the price of the product or carrying liability insurance.

The risk-benefit analysis, it is submitted, is indispensable to a design defect case whether it is brought under negligence or strict liability.³⁷ Its use, however, strains the trial process by forcing the

³⁵ See Wade, *supra*, footnote 33 at pp. 833-4; Montgomery and Owen, "Reflections on the Theory and Administration of Strict Tort Liability for Defective Products", 27 S.C.L. Rev. 803 (1976); *Escola v. Coca Cola Bottling Co. of Fresno*, 150 P.2d 436 (1944), at pp. 443-4.

³⁶ See Donahue, Piehler, Twerski and Weinstein, "The Technological Expert in Products Liability Litigation", 52 Tex. L.Rev. 1303 (1974), at p. 1307.

A design defect action brought in New Brunswick under the Consumer Product Warranty and Liability Act, S.N.B. 1978, c. C-18.1 will, it seems, utilize this analysis. Under s. 27 of the Act, a supplier of a consumer product is liable for consumer losses caused by a product that is "unreasonably dangerous . . . because of a defect in design, materials or workmanship".

³⁷ It is my impression, as I develop it later in my discussion of the Canadian design defect cases, that this analysis has been implicit in the adjudication of design defect cases in Canada.

court to engage in inquiries with which it may not be adequately equipped to deal. Most cases coming before the courts can be broken down into a series of more or less discrete issues, each of which can be solved independently. Such is not the case when a design defect case must be resolved by the court. The design defect presents a problem which Professor Fuller has described as "polycentric".³⁸ The design review process cannot be segregated into a series of discrete, independent issues, each of which may be resolved without influencing the solution of the other issues.

In a negligent design case, the court must, in effect, redesign the product. It must identify and value a myriad of factors, including the nature, severity and probability of danger, the utility of the product (perhaps to the public, as well as the individual), aesthetics, function, adequacy of warnings, class of potential victims, alternate design possibilities, and the marginal cost of available risk reduction techniques — and somehow determine whether or not a product is "unreasonably dangerous" or perhaps is negligently designed. The question is, in its broadest terms, "what portion of society's limited resources are to be allocated to this product's safety, thereby leaving less to be devoted to other social objectives?" The risk-benefit process of design review strains both judicial resources and expertise. As well, the review of design is by definition a multilateral dispute, and it is not clear that Canadian courts are suited to assess the conflicting and shifting interests of the individuals and institutions necessarily affected by design review. At the very least the review process introduces considerable uncertainty into the product design process.³⁹

The problem of unpredictability is a serious one. Values given to the risk-benefit criteria are difficult to quantify — the values of life, personal health and safety are obviously the clearest examples. Allocate high values to those benefits and extensive safety measures would be justified. Lower values would warrant

³⁸ L. Fuller, "Adjudication and the Rule of Law", Proceedings, American Society of International Law (1960-1961), at p. 1. See also Twerski, Weinstein, Donahue and Piehler, "Shifting Perspectives in Products Liability: From Quality to Process Standards", 55 N.Y.U.L.Rev. 347 (1980), at pp. 351-2.

³⁹ The judicial design review process may take into account and value factors which *regulatory* design review considers irrelevant, or perhaps values in the opposite direction. Thus design review may interfere to some extent with national or provincial economic, social or distributive objectives and programmes. See *Dawson v. Chrysler Corp.*, 630 F.2d 950 (1980).

fewer precautions. As Richard Epstein has written, the cost-benefit analyses so far employed offer "no guidance on the proper choice of value for human life. Can a matter of recurrent importance in all personal injury cases be left to a jury which may not even be aware of its existence?"⁴⁰

A possible solution to the unpredictability of the cost-benefit analysis would entail the selection of objective criteria against which defectiveness could be measured.⁴¹ The negligent manufacturing case has its own objective test — the perfectly manufactured product serves as a model for comparison with the product which is the subject of the litigation. Similarly, the use of the consumer expectation test would result in significantly increased predictability, were this test simply to require the manufacturer to comply with government regulations or common practice in its design.⁴² While a consumer expectation test which makes compliance with custom conclusive or even presumptive proof of reasonable care would certainly increase predictability, it would necessarily involve substantial costs — "custom is like a two-edged sword . . . it preserves the useful adjustments of the past, while at the same time it hinders the progress of the future" and is "a barrier to all that might be better".⁴³ There remains, as well, the risk that customary standards, especially if adopted through a consensus decision-making process in the industry, may reflect "the barest minimum of acceptability within the affected

⁴⁰ R. Epstein, *Modern Products Liability Law* (1980), at p. 831. See also G. H. Mooney, *The Valuation of Human Life* (1977); M. W. Jones-Lee, *The Value of Life, An Economic Analysis* (1976); Mooney, "Human Life and Suffering" in *The Valuation of Social Cost*, D. W. Pearce, ed. (1978); E. J. Mishan, *Elements of Cost-Benefit Analysis*, 2nd ed. (1976), pp. 101-8.

The judicial and statutory treatment of "life valuation" issues offers little guidance on this intractable question. See *Woelk v. Halvorson* (1980), 114 D.L.R. (3d) 385, [1981] 1 W.W.R. 289 (S.C.C.) (allowing compensation for loss of assistance and comfort of husband under the Domestic Relations Act, R.S.A. 1970, c. 113, s. 35 as amended by S.A. 1973, c. 61, s. 16, now R.S.A. 1980, c. D-37, s. 43). Compare *Louis v. Esslinger* (1981), 121 D.L.R. (3d) 17 at p. 24, [1981] 3 W.W.R. 350 at p. 360 (B.C.S.C.) (no recovery for non-pecuniary loss on death) and *Leopold v. Knight; Phoenix Assurance Co. of Canada, Third Party* (1980), 116 D.L.R. (3d) 260, 44 N.S.R. (2d) 654 (N.S.S.C. T.D.) (common law does not recognize grief as compensable head of damage), with *Mason v. Peters* (1980), 117 D.L.R. (3d) 417, 30 O.R. (2d) 409 (H.C.J.), affd 139 D.L.R. (3d) 104, 39 O.R. (2d) 27 (C.A.) (permitting recovery for loss of guidance, care and companionship if a pecuniary loss).

⁴¹ See *Texaco Ltd. v. Mulberry Filling Station Ltd.*, [1972] 1 All E.R. 513 (Ch.).

⁴² Epstein, *supra*, footnote 40 at p. 82 and note 27.

⁴³ Bernard, *Social Control in its Sociological Aspects* (1939), pp. 554-5, cited in A. Linden, *Canadian Negligence Law* (Toronto, Butterworths, 1972), p. 57.

industry".⁴⁴ "Custom", and "state of the art" defences, and they are not identical,⁴⁵ confront the court with still another dilemma — to what extent should their legal rules incorporate "technology-pushing" concepts?⁴⁶

The reasoning and level of analysis employed by Canadian judges in negligent design cases are more or less reflected in the words of Mr. Justice Hallett of the Nova Scotia Supreme Court when he concluded that a product sold to an injured plaintiff was either negligently designed or manufactured: "The precautions taken by the defendant . . . failed for one reason or another. The situation speaks for itself".⁴⁷ Canadian courts have seldom admitted the existence of difficult design cases, and accordingly, "reasoning" similar to that used by Hallett J. has sufficed in the few reported Canadian design defect cases.⁴⁸ In addition, two

⁴⁴ See W. P. Keeton, D. Owen and J. E. Montgomery, *Product Liability and Safety* (1980), p. 373.

⁴⁵ The Ontario Law Reform Commission, in its *Report on Products Liability* (1979), seems to assimilate the two concepts. *Ibid.*, at p. 95. See also S. Waddams, *Products Liability*, 2nd ed. (Toronto, Carswell Co. Ltd., 1980), p. 47.

Generally prevailing standards or "custom" refers to the current manufacturing or commercial practices employed by participants in the industry. See Epstein, *supra*, footnote 40 at p. 74. Conversely, "state of the art", refers to the "level of pertinent scientific and technical knowledge existing at the time". See L. Frumer and M. Friedman, *Products Liability*, Vol. 1 (1978), para. 6.05[15]. The distinction is reflected in the reasoning of Linden J. in *Brunski v. Dominion Stores Ltd.* (1982), 20 C.C.L.T. 14 (Ont. H.C.J.), at p. 23.

⁴⁶ Even if one were to look only at "state of the art" as a relevant concept in design defect review one must still decide whether to use "state of the art" at the time of product supply, or the time of injury. See Keeton, "Products Liability — Design Hazards and the Meaning of Defect", 10 Cum. L. Rev. 293 (1979). Keeton suggests that the risk-benefit evaluation should take into account "the magnitude of the scientifically perceivable danger as it is proved at the time of trial". *Ibid.*, at pp. 37, 38. The same view has been advocated by others, including J. Wade, *supra*, footnote 33, and Schwartz, "Foreward: Understanding Products Liability", 67 Cal. L. Rev. 435 (1979), at p. 488.

⁴⁷ *Murphy v. Atlantic Speedy Propane Ltd.* (1979), 103 D.L.R. (3d) 545 at p. 553, 35 N.S.R. (2d) 422 at p. 431.

⁴⁸ See *Rivtow Marine Ltd. v. Washington Iron Works* (1973), 40 D.L.R. (3d) 530, [1974] S.C.R. 1189. This judgment was based upon the duty to warn of a hazard. See also *Ives v. Clare Brothers Ltd.* (1970), 15 D.L.R. (3d) 519, [1971] 1 O.R. 417 (H.C.J.); *Edmonton Flying Club v. Northward Aviation Ltd.* (1979), 17 A.R. 507 (C.A.), at p. 518; *Phillips v. Ford Motor Co. of Canada Ltd.* (1970), 12 D.L.R. (3d) 28, [1970] 2 O.R. 714 (H.C.J.), rev'd on other grounds 18 D.L.R. (3d) 641, [1971] 2 O.R. 637 (C.A.); *Malat v. Bjornson*, [1978] 5 W.W.R. 429, 6 C.C.L.T. 142 (B.C.S.C.), aff'd 114 D.L.R. (3d) 612, 23 B.C.L.R. 235 (C.A.). See also *Smith v. Inglis Ltd.* (1978), 83 D.L.R. (3d) 215, 25 N.S.R. (2d) 38 (S.C. App. Div.); *Lambert v. Lewis*, [1980] 2 W.L.R. 299 (C.A.), rev'd [1981] 1 All E.R. 1185 (H.L.); *Adelaide Chemical and Ferti-*

cases have emphasized the importance of the "state of the art" and accepted industry practice (or custom) as relevant criteria in determining whether or not a product is negligently designed.⁴⁹ More recently, both custom and state of the art arguments apparently influenced Linden J. in *Brunski v. Dominion Stores Ltd.*, in which the design of a glass bottle was under review.⁵⁰ One potential difficulty with using either state of the art or common practice as a criterion for determining defective design is that it allows an industry to create an artificially "retarded" state of the art by purposefully failing to undertake the research necessary to increase the safety of its products, or by creating a common practice by failing to develop or implement new technological advances.⁵¹

One issue which deserves mention, especially in light of the post-transaction acquisition of information regarding UFFI risks, is the time at which the "state of the art" is to be determined; and associated with that issue, the time at which the relevant knowledge of the risks is to be ascertained. The general view would seem to be that in the case of negligent design review in tort, the time of product distribution is critical both in the context of knowledge of "risk reduction techniques", and in the context of information about product risks.⁵² The view in contract law would seem, however, to be the opposite,⁵³ which may have significant implications in the case of the statutory implied

lizer Co. Ltd. v. Carlyle (1940), 64 C.L.R. 520; *Willis v. FMC Machinery and Chemicals Ltd.* (1976), 68 D.L.R. (3d) 127, 11 Nfld. & P.E.I.R. 361 (P.E.I. S.C.).

⁴⁹ *The London & Lancashire Guarantee & Accident Company of Canada v. La Cie F.X. Drolet*, [1944] 1 D.L.R. 561 at p. 568, [1944] S.C.R. 82 at pp. 90-1.

⁵⁰ *Supra*, footnote 45 at p. 554.

⁵¹ See *Murphy v. Atlantic Speedy Propane Ltd.*, *supra*, footnote 47. At the same time, the "common practice" defence is subject to the manufacturer being held to the standard of an expert in his field. See cases at footnote 85, *infra*.

⁵² See *Waddams*, *supra*, footnote 45 at p. 47; *Brunski v. Dominion Stores Ltd.*, *supra*, footnote 45.

⁵³ See *Henry Kendall & Sons v. William Lillico & Sons Ltd.*, [1969] 2 A.C. 31 (H.L.), at pp. 75 and 108-9; *Frost v. The Aylesbury Dairy Co., Ltd.*, [1905] 1 K.B. 608 (C.A.). Liability in contract will be imposed even if the defect could not have been discovered without destructive testing. See *Sigurdson v. Hillcrest Service Ltd.* (1976), 73 D.L.R. (3d) 132, [1977] 1 W.W.R. 740 (Sask. Q.B.). Compare J. Henderson, "Coping with the Time Dimension in Products Liability", 69 Cal. L.Rev. 919 (1981), at note 19.

warranty action against non-direct suppliers which may be available in Saskatchewan⁵⁴ and New Brunswick.⁵⁵

It seems that, in Canada, while compliance with government standards or safety certification of a product is a relevant factor in demonstrating reasonable care in product design, it is not conclusive.⁵⁶ Finally, one negligence case has set out explicitly, albeit in an unsophisticated manner, the risk-benefit analysis which it considered should be employed in determining the adequacy of product design.⁵⁷

A reading of the negligent design cases demonstrates quite convincingly that Canadian courts generally do not set out the reasoning behind their judgments concerning defectively designed products, perhaps because they have not been faced with a challenging, complex case,⁵⁸ or perhaps because they intuitively appreciate the conceptual difficulties, and irreconcilable normative conflicts inherent in any case of design review. Admittedly, design review necessarily involves a substantial element of normative judgment, no matter how sophisticated the analysis of

⁵⁴ See the Consumer Products Warranties Act, R.S.S. 1978, c. C-30, ss. 11.4, 13(2). However, it may be argued that a manufacturer of urea formaldehyde *components* is not a manufacturer of a consumer product as that term is defined in s. 2(e) of the Act. See L. Romero, "The Consumer Products Warranties Act", 43 Sask. L.R. 81 (1978-79), at p. 111.

The New Brunswick Consumer Product Warranty and Liability Act, S.N.B. 1978, c. C-18.1 also provides for an implied warranty action which could be brought by consumers against sellers of formaldehyde foam. While privity of contract is abolished under s. 23 of the Act in respect of consumer losses, it would seem that component chemical manufacturers would not come within the definition of seller in s. 1. See K. J. Dore, "The Consumer Product Warranty and Liability Act", 31 U.N.B.L.J. 161 (1982).

⁵⁵ The Consumer Product Warranty and Liability Act, *supra*, s. 27(1), (4). See also Henderson, *supra*, footnote 53 at pp. 928-31. Again, however, the action would seem to be available only against suppliers of a consumer product which might exclude component part manufacturers.

⁵⁶ See *Willis v. FMC Machinery and Chemicals Ltd.*, *supra*, footnote 48 (government certification of pesticide not determinative in design negligence); *Paskivski v. Canadian Pacific Ltd.* (1975), 57 D.L.R. (3d) 280 at p. 285, [1976] 1 S.C.R. 687 at p. 698; *C.N.R. v. Vincent* (1978), 93 D.L.R. (3d) 663, [1979] 1 S.C.R. 364.

⁵⁷ *Edmonton Flying Club v. Northward Aviation Ltd.*, *supra*, footnote 48 at pp. 525-6. See also *Jordan House Ltd. v. Menow and Honsberger* (1973), 38 D.L.R. (3d) 105 at p. 110, [1974] S.C.R. 239 at p. 247; *Dziwenka v. The Queen in right of Alberta* (1971), 25 D.L.R. (3d) 12, [1972] S.C.R. 419; *Stermer v. Lawson* (1977), 79 D.L.R. (3d) 366, [1977] 5 W.W.R. 628 (B.C. S.C.), *var*d 107 D.L.R. (3d) 36, [1980] 3 W.W.R. 92 (B.C.C.A.).

⁵⁸ For examples of complex cases, see *Wilson v. Piper Aircraft Corp.*, 577 P.2d 1322 (1978); *Garst v. General Motors Corp.*, 484 P.2d 47 (1971); *Twiner v. General Motors Corp.*, 514 S.W.2d 497 (1974); *Kropp v. Douglas Aircraft Co.*, 329 F. Supp. 447 (1971).

the problem. As mentioned above, one cannot pretend to balance the cost of lives against the cost of improving the safety of a product by employing a pseudo-scientific formula. At the very least, it is important that the factors which the court considers to be relevant in determining whether or not a product is reasonably safe be explicitly defined.

Negligent design cases generally involve the analysis of either the structure⁵⁹ of an object or the design of procedure.⁶⁰ The urea formaldehyde foam design case, however, does not fit into either of these categories. The urea formaldehyde manufacturer designed and sold chemical components *and* patented a procedure⁶¹ through which the components would be transformed into insulation. Whether or not the final product was an “unreasonably dangerous” product depends as much upon the design and performance of the installation procedures as it does upon the quality of the components. Thus, the question of whether urea formaldehyde foam is negligently designed can only be answered by asking questions about the insulation product’s performance characteristics and the design of its installation procedures:

- (a) Was there sufficient testing of the installation process, procedures, and end product?
- (b) Was the on-site manufacture and installation of the foam so sensitive to environmental factors as not to be a viable procedure?
- (c) Did the foam present a danger to health even when it was “perfectly” installed?
- (d) Was proper provision made for the storage and timely use of the component parts?
- (e) Were installers adequately trained and were they sufficiently skilled to mix and install properly the foam?
- (f) Since the on-site mixing and installation of urea formaldehyde foam were two of the most vital phases of production, were the manufacturers negligent in allowing independent contractors to take charge of these phases? (*I.e.*, was the distribution system designed negligently?)

⁵⁹ See cases, *supra*, at footnote 48.

⁶⁰ See *Chasney v. Anderson*, [1950] 4 D.L.R. 223 (surgeon negligent in failing to use surgical sponges with tapes attached, a procedure which would have prevented sponges being left in patient).

⁶¹ See *supra*, footnote 8.

- (g) Should the manufacturers have developed effective remedial measures *before* marketing the product?

Any attempt to establish legal responsibility on component chemical manufacturers, which looks to the defective design of a consumer product (in this case foam insulation), will be met by the argument that the component manufacturers did not manufacture a consumer product which allegedly caused the loss.⁶² Rather they manufactured chemicals and sold them to a third party who manufactured a consumer product from the chemicals. A supplier of raw materials, which themselves are not “defective”, cannot be held responsible when those materials are used in the negligent manufacture of a product by a subsequent manufacturer which causes injury to the public.⁶³ These arguments may be met by establishing liability on the component chemical manufacturer for the design of the foam manufacturing process, which was patented in the manufacturer’s name. The distributorship agreement entered into by at least one component chemical manufacturer grants the right to distribute the foam system — it does not simply involve the supply of component chemicals.⁶⁴ The negligence in design consists of the design of a manufacturing *process* which was used to produce a product which may be unreasonably dangerous.⁶⁵ The liability of

⁶² While manufacturers of component parts have been found liable in design negligence cases, it is clear that the “component” was an independent, pre-existing physical object which is simply incorporated or added to another object. See *Evans v. Triplex Safety Glass Co. Ltd.*, [1936] 1 All E.R. 283 (K.B.); *City of Franklin v. Badger Ford Truck Sales, Inc.*, 207 N.W. 2d 866 (1973); *Clark v. Bendix Corp.*, 345 N.Y.S. 2d 662 (1973); *d’Hedunville v. Pioneer Hotel Co.*, 552 F. 2d 886 (1977); *Union Supply Co. v. Pust*, 583 P. 2d 276 (1978); *Restatement of Torts* (Second), s. 402A, comment p, and comment q.

⁶³ Several American cases make this point, as does the *Restatement of Torts* (Second), s. 402A, comment p. See *Parker v. Warren*, 503 S.W. 2d 938 (1974); *Walker v. Stauffer Chem. Corp.*, 96 Cal. Rptr. 803 (1971); *Taylor v. Paul O. Abbe, Inc.*, 516 F. 2d 145 (1975); *Temple v. Wean United, Inc.* 364 N.E. 2d 267 (1967); *Elliot v. Century Chevrolet Co.*, 597 S.W. 2d 563 (1980).

M’Alister (or Donoghue) v. Stevenson, [1932] A.C. 562 (H.L.), at p. 599. Admittedly, the requirement is not absolute. See Waddams, *supra*, footnote 45 at pp. 56-8; *Smith v. Inglis Ltd.* (1978), 83 D.L.R. (3d) 215, 25 N.S.R. (2d) 38 (S.C. App. Div.); *Shields v. Hobbs Manufacturing Co.* (1962), 34 D.L.R. (2d) 307 (S.C.C.).

⁶⁴ See *Distributor Agreement, Insulspray Urea Formaldehyde Foam System*, between Borden Chemical Canada and Versachem Corporation, July 19, 1976 (on file at Faculty of Law, University of British Columbia).

⁶⁵ This issue may also be analyzed as a case of vicarious liability for the torts of independent contractors engaged in an activity which may be expected to cause injury. In such a case the principal must ensure that reasonable steps are taken to prevent injury. *Wilby v. Savage*, [1953] 4 D.L.R. 319, 32 M.P.R. 63 (N.B.S.C. App. Div.), affd

component part manufacturers, when it has been suggested that they are responsible to end users notwithstanding substantial modification of a component part, seems to focus on the ability of the component manufacturer to know of and perhaps control the use and design of the end product.⁶⁶

The application of design defect analysis to the design of the urea formaldehyde manufacturing process will take into account the risks to health and safety presented by the product and known to the industry in 1975;⁶⁷ the existence of alternative insulation products which performed the same or a similar function as formaldehyde foam;⁶⁸ the ability to reduce or eliminate the dangerous characteristics of the product;⁶⁹ the ability to control the quality of the product produced on site;⁷⁰ the extent of product testing and research in respect of health risks carried out by the designers of the manufacturing process; and knowledge of the probability, nature and extent of personal injury, property damage and repair costs.⁷¹ The review of design adequacy is,

[1954] 3 D.L.R. 204, [1954] S.C.R. 376; *Vojvodan v. Woods*, [1977] 2 C.C.L.T. 86; *Custom Ceilings Inc. v. S.W. Fleming & Co. Ltd.* (1970), 12 D.L.R.(3d) 209, [1970] 3 O.R. 17 (H.C.J.).

An argument can be made that the manufacturers cannot argue that the activities of the installers constituted an intervening negligent act which absolves the former from liability. The cases suggest that the issue will, to a large degree, depend upon the foreseeability of the negligent intervention. See *Home Office v. Dorset Yacht Co. Ltd.*, [1970] 2 All E.R. 294 (H.L.); *Harris v. Toronto Transit Commission* (1967), 63 D.L.R. (2d) 450 at p. 455, [1967] S.C.R. 460 at p. 465. See also A. Linden, *Canadian Tort Law* (Toronto, Butterworths, 1977), pp. 341-3; *Edmonton Flying Club v. Northward Aviation Ltd.*, *supra*, footnote 48 at p. 527.

⁶⁶ See *Temple v. Wean United, Inc.*, 364 N.E.2d 267 (1977), at p. 272; *Walker v. Stauffer Chem. Corp.*, *supra*, footnote 63 at p. 806; *Kasel v. Remington Arms Co. Inc.*, 101 Cal. Rptr. 314 (1972), at p. 322.

⁶⁷ See introduction, *supra*, at footnote 12. The question as to the time at which one looks at the state of industry knowledge would seem to be the time of product distribution. See *supra*, footnote 46.

⁶⁸ It seems that several other products were and are available which were equally suitable for use as a residential retrofit insulation product. Canadian Home Insulation Program, Material List, effective September 26, 1979, Hazardous Products Board of Review, Exhibit 219A.

⁶⁹ The consensus appears to be that foam insulation, even when installed under laboratory conditions will emit levels of formaldehyde well above the levels associated with irritation and other health problems. See Consumer Product Safety Commission, *supra*, footnote 6 at 14402.

⁷⁰ The ability to minimize the release of formaldehyde fumes is directly related to the quality of foam produced, which is, in turn, dependent upon a number of "application parameters", identified in 1977 as including: the quality of the ingredients; the ratios of the ingredients; the mixing of the ingredients; the viscosities of the ingredients; the age and shelf life of the ingredients; and the temperature at which the foaming takes place.

⁷¹ Given a general lack of knowledge about the characteristics and performance of urea

however, in its infancy in Canada, and it would be premature to predict the outcome of the review of the design of formaldehyde foam insulation.⁷²

(2) Failure to Warn

A second possible source of legal responsibility of both component manufacturers and installers may be based on the failure of those enterprises to warn users of the risks associated with the foam. The courts have recognized that accidents, personal injury, and property damage may be reduced both in the sense that information may permit assumption of risk and price modification as part of the transacting process (and thus eliminate the "accident" through a risk assumption analysis), and in the sense that information may reduce the actual incidence of injury during the time when the product is in use. The apparent benefits of product information, whether through warnings or instructions for use, include a reduction in search costs,⁷³ the non-occurrence

formaldehyde foam, it is important to note that one of the largest component chemical manufacturers apparently undertook very little research into the foam's performance and safety characteristics. See Testimony of B. Wood, General Sales Manager, Borden Chemical, Hazardous Products Board of Review, Transcript of Proceedings, Vol. 25 at pp. 63-111.

See also W. J. Rossiter *et al.*, "Urea-Formaldehyde Based Insulations: An Assessment of Their Properties and Performance", United States Dept. of Commerce, National Bureau of Standards, Technical Note 946, at pp. 8-9. The National Bureau of Standards concluded that "no means of assuring the level of quality of urea-formaldehyde based foams" existed. *Ibid.*, at p. 5.

⁷² In July, 1977, data on the durability of urea formaldehyde foam insulation and its propensity to release formaldehyde fumes was generally contradictory or inadequate. The report submitted to the United States National Bureau of Standards stated that, while properties of density, mechanical strength and water absorption are determined:

for other performance properties there are insufficient data available from which performance may be adequately evaluated: effect of foam on other building materials; resistance of the foam to freezing and thawing; water vapor transmission; effect of absorbed water on the thermal conductivity of the foam; maximum service temperature; effect of high temperature and high humidity. [See Rossiter, *supra*, footnote 71 at pp. 8-9.]

⁷³ It is possible to argue that product information supplied by suppliers of goods will substantially reduce the aggregate search costs which consumers must incur in order to assess comparative risks. See R. Hirschhorn, *A Case Study: Energy Consumption Labelling Requirements for Refrigerators*, Policy Co-ordination Branch, Consumer and Corporate Affairs Canada (1979), at p. 10. The reduction in search costs is, however, subject to certain constraints. The obligation to disclose information should only extend to the point where the marginal cost of information acquisition and transfer costs equal the marginal benefit of the information to the consumer.

The consumer will be prepared to pay for information only to the point where the

of the accident where the consumer has purchased the product with knowledge of the risks,⁷⁴ an improvement in resource allocation in consumer decision-making,⁷⁵ and the modification of post-transaction behaviour so as to reduce the incidence of accidents,⁷⁶ or to permit amelioration of the consequences of the accident through insurance.

The assumption which the courts seem to make is that the producer of the good is often in a position to acquire and disseminate information about the product at a lower marginal cost than a product user. The supplier may have already invested resources in obtaining information about the product in the

marginal cost of information acquisition as to price and non-price terms does not exceed the expected benefits of further search costs. See Stigler, "The Economics of Information", 69 J. Pol. Econ. 213 (1961); McGall, "The Economics of Information and Optimal Shopping Rules", 38 J. Bus. 300 (1965).

⁷⁴ See J. Guss, "Product Quality — A Multidisciplinary Policy Perspective" in *The New Consumer Protection Act of Quebec*, Meredith Memorial Lectures (1979), p. 159.

This view is reflected in the definition of a defective good which focuses on conformity with consumer expectation. So long as the product conforms to the expectations of the consumer, the product is not defective, and compensation is denied. See Ontario Law Reform Commission, *Report on Products Liability* (1979), at pp. 13, 80. This view assumes that consumers are willing to except a sum of money in return for exposure to an additional risk of personal injury. On this basis, the additional risk of personal injury, when disclosed through a warning, "takes its place as one of a number of economic consequences" which affect product users. See E. J. Mishan, *Elements of Cost-Benefit Analysis*, 2nd ed. (1976), p. 104. The reaction of the individual once the risk has occurred, no matter how terrible, is irrelevant:

Person A, for example may find himself disabled for life and rue his decision to take the risk. But this is only a painful reminder of the fact that people come to regret a great many choices they make. [See Mishan, *ibid.*, at p. 108.]

The issue is not a concern with reduction in injuries, but resource allocation. The issue arises in the case of the duty to warn patients of the risks of adverse drug reactions. See *Crossman v. Stewart* (1977), 82 D.L.R. (3d) 677, 5 C.C.L.T. 45 (B.C.S.C.) The disclosure may not in fact reduce the risk of injury to the plaintiff, especially where knowledge of the risk does not permit the doctor or the patient to undertake steps to reduce the incidence of injury. The concern is one of informed consent, and the function of the information is to permit the product user to determine if he is willing to assume the risk concomitant to using the drug. See Twerski, Weinstein, Donahue and Piehler, "The Use and Abuse of Warnings in Products Liability", 61 Cor. L. Rev. 495 (1976).

⁷⁵ Another way of making the same point is to argue that information is relevant to consumer choice, and that the lack of information about a product and its properties may well result in a misallocation of resources by the consumer. Where consumers misperceive the benefits or costs of a transaction, the decision to obtain the good based on imperfect information will result in a loss in consumer welfare through a sub-optimal decision. See S. Peltzman, "An Evaluation of Consumer Protection Legislation: The 1962 Drug Amendments", 81 J. of Pol. Econ. 1049 (1973); K. Lancaster, "A New Approach to Consumer Theory", J. of Pol. Econ. 132 (1966).

⁷⁶ See *Clarke v. Army and Navy Co-operative Society, Ltd.*, [1903] 1 K.B. 155 (C.A.), at pp. 161, 167.

course of product development and marketing. As well, economies of scale will often permit the product supplier to collect and disseminate information at a lower marginal cost than the user.⁷⁷ A third judicial assumption is that less than an optimal level of information about product characteristics may be generated by the market.⁷⁸ In many cases, the supplier of the information cannot realize the full value of his investment in producing the information, as potential users need not disclose their willingness to pay for the good, and the supplier may not be able to charge for the information.⁷⁹ Because the supplier of information cannot divide his product and transfer it to willing buyers at a price, the information tends to be underproduced. Equally important, the information, once produced, can, and perhaps should be distributed and reproduced at an extremely low cost. Of course, the information will not be distributed to this degree by suppliers who cannot charge the potential users enough to cover their production costs. Finally, underproduction of information is exacerbated where, in the case of information which would reduce the price that potential buyers would be willing to pay for the good, the private costs of information disclosure will almost certainly preclude a voluntary decision to transfer the information by a supplier.⁸⁰

The result of these points has been the judicial imposition of a legal obligation to disclose information to product users — the duty to warn is a subset of a broader legal obligation encompassing aspects of contractual warranties, negligent misrepresentation and unconscionability. For the purposes of discussion the duty to warn may be described as the obligation to disclose information as to the existence of product hazards,⁸¹ and to

⁷⁷ See J. F. Barry, "The Economics of Outside Information and Rule 10b-5", 129 U. Penn. L.Rev. 1307 (1981), at p. 1323; Nelson, "Advertising as Information", 82 J. of Pol. Econ. 729 (1974); Hendon, *The Economic Effects of Advertising* (1976), p. 39.

⁷⁸ This informational failure is one of the primary rationales for government intervention in consumer transactions in an effort to correct market imperfections resulting from inadequate information. The lack of information will often result in under or over-utilization of resources. See Mantador and Baumann, *Government Intervention in the Marketplace and the Case for Social Regulation*, Treasury Branch Secretariat (1977), p. 7.

⁷⁹ See R. Musgrove, *The Theory of Public Finance* (1959), p. 80.

⁸⁰ See T. Kronman, "Mistake, Disclosure, Information, and the Law of Contracts", 2 J. of Leg. Stud. 1 (1978); D. W. Noel and J. J. Phillips, *Products Liability*, 2nd ed. (1982), p. 468; *Heuschel v. Baby Bathinette Corp.*, 215 F. 2d 102 (1954).

⁸¹ Hazards refers to risks of personal injury or property damage. Whether the duty to warn

inform potential users of the means to avoid unsafe use of the product.⁸² In some cases, the latter obligation is assimilated to a duty to provide adequate instructions, which will be analyzed in the same manner as the duty to warn.⁸³

The duty to disclose information relating to hazards, unless it is coupled with an objective standard of knowledge, may simply reduce the incentives to suppliers to acquire information which requires an investment of resources.⁸⁴ Accordingly, the courts have established that suppliers must disclose information about which they *ought* to have known,⁸⁵ and manufacturers will be held to have constructive knowledge of experts in the industry.⁸⁶ The obligation applies to transactions involving the supply of services,⁸⁷ as well as products⁸⁸ and perhaps the supply of design processes.⁸⁹

can be extended to economic risks is problematical. Where the alleged failure to warn of economic risks arises in a "direct" relationship, the issue is usually discussed in terms of contract or negligent misrepresentation.

⁸² The purpose of the disclosure of risks is not simply to permit accurate pricing of goods; it is to influence post-transactional behaviour so as to reduce the incidence of accidents. Accordingly, information about the nature and extent of the risks and how they might be avoided may have to be disclosed. See *Ruegger v. Shell Oil Co. of Canada Ltd.* (1963), 41 D.L.R. (2d) 183, [1964] 1 O.R. 88 (H.C.J.); K. Ross, "Legal and Practical Considerations for the Creation of Warning Labels and Instruction Books", 4 J. of Prod. Liab. 29 (1981), at p. 39.

⁸³ *Midgley v. S.S. Kresge Co.*, 55 Cal. App. 3d 67 (1976) (manufacturer liable for failure to warn of dangers associated with incorrect assembly of product); *Austin v. 3M Canada Ltd.* (1974), 54 D.L.R. (3d) 656, 7 O.R. (2d) 200 (Co. Ct.).

⁸⁴ See Kronman, *supra*, footnote 80.

⁸⁵ *Ruegger v. Shell Oil Co. of Canada*, *supra*, footnote 82; *Labrecque v. Saskatchewan Wheat Pool* (1977), 78 D.L.R. (3d) 289 at p. 303, [1977] 6 W.W.R. 122 at p. 140 (Sask. Q.B.), appeal allowed in part 110 D.L.R. (3d) 686, [1980] 3 W.W.R. 558 (Sask. C.A.); *Cominco Ltd. v. Westinghouse Canada Ltd.* (1982), 127 D.L.R. (3d) 544 (B.C.S.C.), at p. 572, 147 D.L.R. (3d) 279 (B.C.C.A.); *Lem v. Barotto Sports Ltd.* (1976), 69 D.L.R. (3d) 276 at p. 287, 1 A.R. 556 at pp. 574-5 (S.C. App. Div.).

⁸⁶ See cases, *supra*, at footnote 85. Associated with the imposition of constructive knowledge is the imposition of a legal obligation to acquire knowledge through research and development. See *Willis v. FMC Machinery & Chemicals Ltd.* (1976), 68 D.L.R. (3d) 127, 11 Nfld. & P.E.I.R. 361 (P.E.I. S.C.).

⁸⁷ *Senkiew v. Lachuta* (1981), 11 Man. R. (2d) 444 (Q.B.); *McNeil v. Village Locksmith Ltd.* (1981), 129 D.L.R. (3d) 543 at p. 546, 35 O.R. (2d) 50 at p. 52 (H.C.J.); *Gold v. Servicemaster of Calgary Ltd.* (1977), 6 A.R. 248 (Dist. Ct.).

⁸⁸ The duty to warn has been applied to the supply of goods as a matter of course, the degree of care expected of the supplier varying with the degree of hazard represented by the product. However, there is some suggestion that the duty to warn will be applied only when the goods are of themselves of a hazardous nature. See *Ivan v. Aoco Ltd.* (1980), 5 Sask. R. 78 (C.A.), at p. 80.

⁸⁹ The issue in this case, as in the case of an alleged design defect, is the extent to which

The structure of the formaldehyde industry and the nature of the UFFI manufacturing process suggest that the formaldehyde product liability case is unusual in that the focus of liability is the failure to warn by manufacturers of components from which a consumer product is manufactured on site by another commercial enterprise. There is little doubt that the duty to warn applies to the installer,⁹⁰ but the responsibility of component manufacturers is less clear.⁹¹ Where a product is supplied by a manufacturer through an intermediate party to ultimate users, information disclosure will often be most effective if the manufacturer transfers information to the intermediate, who can then take steps to reduce the risk through further warnings, or who may be able to negotiate the allocation of the risk with the ultimate user.⁹² The question, then, is whether the component manufacturer need go further and warn users of products which he does not manufacture.

The accident reduction function of warnings to intermediate distributors is premised on the distributors adopting measures to inform end users, or to negotiate risk allocation. Where this will not take place, it is arguable that the warning is not an effective accident reduction technique, and the manufacturer must take steps to disseminate information directly to the consumer.⁹³

component manufacturers will be held liable for failing to warn product users of risks associated with use of a product manufactured by an intermediate using their components.

⁹⁰ See *supra*, footnote 87.

⁹¹ It is true, of course, that manufacturers of unaltered products may be under a duty of care to ultimate users. See *Ivan v. Aoco Ltd.*, *supra*, footnote 88; *Setrakov Construction Ltd. v. Winder's Storage & Distributors Ltd.* (1981), 128 D.L.R. (3d) 301, 11 Sask. R. 286 (C.A.); *Rivtow Marine Ltd. v. Washington Iron Works* (1973), 40 D.L.R. (3d) 530, [1974] S.C.R. 1189; *Lambert v. Lastoplex Chemicals Co. Ltd.* (1971), 25 D.L.R. (3d) 121, [1972] S.C.R. 569.

⁹² For both these reasons the courts, on several occasions have held that manufacturers of products owe a duty of care to ultimate consumers, to inform intermediate parties of the risks associated with product use. See *Holmes v. Ashford*, [1950] 2 All E.R. 76 (C.A.); *Albert, Savoie, Savoie and Wishart v. Breau and Drummond Industries Ltd. (Third Party) and C.I.L. (Fourth Party)* (1977), 19 N.B.R. (2d) 476 (S.C. Q.B. Div.); *Parker v. Oloxo, Ltd.* [1937] 3 All E.R. 524; *Gravis v. Parke, Davis & Co.*, 502 S.W.2d 863 (1973), at p. 868; *Davis v. Wyeth Laboratories, Inc.*, 399 F. 2d 121 (1968); R. A. Merrill, "Compensation for Prescription Drug Injuries", 59 Va. L. Rev. 1 (1973), at p. 8.

⁹³ S. A. Liccardo, "Consumers' Right to Know: A New Horizon in Drug Product Liability", J. of Prod. Liab. 165 (1977); Interagency Task Force on Product Liability, *Final Report of the Legal Study*, Vol. II (1977), pp. 73-5; *Davis v. Wyeth Laboratories, Inc.*, *supra*, footnote 92; *Jackson v. Coast Paint and Lacquer Co.*, 499 F. 2d 809 (1974).

There are, however, a number of cases which suggest that manufacturers are under *no* legal duty to warn ultimate consumers where the product will be applied by an intermediate party,⁹⁴ or where the manufacturer is a component part manufacturer.⁹⁵ The better view is that, at least in some cases, manufacturers of products which will be applied or installed by an intermediate party, are under a legal duty of care to disclose risks to both the intermediate party *and* the ultimate user.⁹⁶ The question, of course, is whether manufacturers of *component* chemicals which are transformed into a consumer product, should be under a similar legal obligation to warn end users of risks that may arise from the failure of the *product* manufacturer to produce a non-defective product. The intervening activity of the product manufacturer may be considered as an entirely independent source of legal responsibility.⁹⁷

The requirement that a component manufacturer disclose risks to ultimate consumers should be imposed, it seems, when the disclosure will permit the consumer to make a more accurate purchase decision, and where the information will reduce the incidence, severity and consequences of accidents. While information disclosure to intermediate parties may contribute to those objectives, to the degree that intermediate party disclosure is ineffective, there seems to be no logical or functional reason to

Several cases in Canada and Australia have adopted this rationale. See *Streets Ice Cream v. Australian Asbestos*, [1967] 1 N.S.W.R. 50 (S.C.); *Good-Wear Treaders Ltd. v. D & B Holdings Ltd.* (1979), 98 D.L.R. (3d) 59 at pp. 67-8, 31 N.S.R. (2d) 380 at p. 392 *sub nom.* *Murphy v. D & B Holdings* (N.S.S.C. App. Div.) *per* MacKeigan C.J.N.S.

⁹⁴ See *Holmes v. Ashford*, *supra*, footnote 92; *Albert, Savoie, Savoie and Wishart v. Breau and Drummond Industries Ltd. (Third Party) and C.I.L. (Fourth Party)*, *supra*, footnote 92.

⁹⁵ See *Jones v. City of Calgary* (1969), 3 D.L.R. (3d) 455, 67 W.W.R. 589 (Alta. S.C.).

⁹⁶ See *Wright v. Dunlop Rubber Co. Ltd.* (1972), 13 K.I.R. 255; *Stermer v. Lawson* (1977), 79 D.L.R. (3d) 366 at pp. 373-4, [1977] 5 W.W.R. 628 at p. 636 (B.C.S.C.), *var*d 107 D.L.R. (3d) 36, [1980] 3 W.W.R. 92 (B.C.S.C.); *Ruegger v. Shell Oil Co. of Canada*, *supra*, footnote 82 at p. 193 D.L.R., p. 98 O.R.; *Pack v. County of Warner No. 5, Michelson* (1964), 44 D.L.R. (2d) 215, 46 W.W.R. 422 (Alta. S.C. App. Div.); *Lavoie v. Poitras Gas & Oil Ltd. and Terry Burner Inc.* (1979), 28 N.B.R. (2d) 541 (C.A.) (duty on oil tank manufacturer to warn end user of risk of gasoline leakage); *Phillips v. Ford Motor Co. of Canada Ltd.* (1970), 12 D.L.R. (3d) 28, [1970] 2 O.R. 714 (C.A.), *revid* on other grounds 18 D.L.R. (3d) 641, [1971] 2 O.R. 637 (C.A.).

⁹⁷ See *Good-Wear Treaders Ltd. v. D & B Holdings Ltd.*, *supra*, footnote 93 at pp. 69-70 D.L.R., p. 394 N.S.R.; *Schmitz v. Stoveld, MacNaughton-Brooks Ltd., Third Party* (1974), 64 D.L.R. (3d) 615 at pp. 624-5, 11 O.R. (2d) 17 at pp. 24-5 (Co. Ct.), *leave* to appeal to Court of Appeal refused, 64 D.L.R. (3d) 615n (C.A.).

exempt component manufacturers from responsibility to disclose risks to end users. The only points which should be acknowledged are, first, that the component manufacturer may in some cases be able to seek contribution from the intermediate party, while in other cases, the component manufacturer might be held responsible for the negligence of the installer;⁹⁸ and second, that the court must assess the benefits of direct warnings against the feasibility and cost of information transfer where the "product" is not in existence when the manufacturer distributes the component chemicals.

The imposition of an obligation to disclose information is not the creation of *strict* liability for inaccurate information or failure to warn.⁹⁹ While it is true that information disclosure regulation (the duty to warn) dispenses with the need to draw artificial lines between defective and non-defective goods, or between goods which are reasonably or unreasonably dangerous,¹⁰⁰ the court must still assess whether the information provider "ought to have transferred the information", or put another way, whether the

⁹⁸ See *Darlington v. Mobran Sales Ltd.* (1981), 12 Man.R. (2d) 199 (Co. Ct.), at p. 209 (importer under a duty to consumer to ensure that dealers were not negligent where importers know or ought to know of possible negligence). At best the issue will be one of contributory negligence. See *Haynes v. Harwood*, [1935] 1 K.B. 146 (C.A.), at p. 156; *Smith v. Inglis Ltd.* (1978), 83 D.L.R. (3d) 215, 25 N.S.R. (2d) 38 (S.C. App. Div.).

⁹⁹ As noted by many writers, the imposition of a duty to disclose "perfect" information is neither desirable nor possible. From one perspective, it is arguable that the supplier should only acquire and transfer information to the point that the marginal cost of information acquisition and transfer are equal to the marginal benefits of the information to the consumer. See Stigler, "The Economics of Information", 69 J. of Pol. Econ. 213 (1961); M. J. Trebilcock, "Economic Criteria of Unconscionability", Study 11 in B. J. Reiter and J. Swan, eds., *Studies in Contract Law* (Toronto, Butterworths, 1980), pp. 408-9.

In addition, the ability of consumers to process information effectively may deteriorate where more information is transferred. See D. Cohen, "Comment on The Plain English Movement", 6 C.B.L.J. 421 (1981-82), at pp. 428-9; Jacoby, Speller and Kohn, "Brand Choice as a Function of Information Load", 11 J. Mktg. Res. 63 (1974); M. Blakeney and S. Barnes, "Advertising Regulation in Australia An Evaluation", 8 Adelaide L.R. 29 (1982), at pp. 30-2; A. Leff, "Injury, Ignorance and Spite — The Dynamics of Coercive Collection", 80 Yale L.J. 1 (1970), at p. 33.

¹⁰⁰ See *Lambert v. Lastoplex Chemicals Co. Ltd.*, *supra*, footnote 91; *Lem v. Barotto Sports Ltd.*, *supra*, footnote 85; *Rae and Rae v. T. Eaton Co. (Maritimes) Ltd.* (1961), 28 D.L.R. (2d) 522 (N.S.S.C.), at p. 534.

Put another way, the inadequate warning might be viewed as the defect. See *Burton v. L. O. Smith Foundry Products Co.*, 529 F.2d 108 (1976); *Alman Bros. Farms & Feed Mill Inc. v. Diamond Laboratories, Inc.*, 437 F.2d 1295 (1971).

information provider was negligent in failing to warn of the risks associated with use of the product.¹⁰¹

The decision that information ought to have been disclosed by suppliers involves a number of variables all of which relate to the cost effectiveness of the warnings. They include the probability of the accident occurring, the nature and severity of the accident which does occur, the frequency with which the product is used in such a manner as to give rise to an injury, the costs of information transfer, knowledge of the risk by the supplier and user, and alternative sources of information. Finally, the nature of the risk of which warnings ought to have been given will be directly relevant to the establishment of the standard of care expected.

The determination of negligence will depend to a large degree on the degree of risk presented by the foam. As the information transferred becomes less relevant to the consumer (as the probability of injury decreases), it should not be transferred both because it may interfere with perception and utilization of high risk information, and because the marginal cost of information production and transfer may exceed the willingness of consumers to pay for it.¹⁰² The courts have adopted this limitation through the principle that the supplier need only disclose "foreseeable risks".¹⁰³

At the same time, there is a suggestion in some cases that suppliers must disclose information regarding any "dangerous" property in the product distributed, regardless of the degree of risk.¹⁰⁴ This approach avoids the task of distinguishing, categorically, "high probability risks" which justify disclosure, from "low probability risks" which need not be disclosed. The decision in *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.*¹⁰⁵

¹⁰¹ See *Wright v. Dunlop Rubber Co. Ltd. v. Imperial Chemical Industries Ltd.* (1972), 13 K.I.R. 255; *Rae and Rae v. T. Eaton Co. (Maritimes) Ltd.*, *supra*, footnote 100 at p. 536.

¹⁰² The low probability risk may necessitate substantial acquisition costs which will exacerbate the misallocation of resources resulting from consumer under-utilization of the information.

¹⁰³ See *Thibault v. Sears, Roebuck & Co.*, 395 A. 2d 843 (1978) (unintended use of product where unforeseeable need not be warned against); *Rae and Rae v. T. Eaton Co. (Maritimes) Ltd.*, *supra*, footnote 100 at p. 563 (no duty to warn of risks which are a mere possibility); *Allard v. Manahan* (1974), 46 D.L.R. (3d) 614, [1974] 3 W.W.R. 588 (B.C.S.C.); *Tanner v. Atlantic Bridge Co. Ltd.* (1966), 56 D.L.R. (2d) 162, [1965-69] 4 N.S.R. 441 (S.C.); *Lem v. Barotto Sports Ltd.*, *supra*, footnote 85.

¹⁰⁴ *Wright v. Dunlop Rubber Co. Ltd.*, *supra*, footnote 101 at p. 260 (manufacturers liable for failing to warn of risks in a product "containing some proportion, however low, of a known dangerous carcinogen").

¹⁰⁵ [1982] 2 W.W.R. 385, 19 C.C.L.T. 263 (B.C.C.A.).

suggests that a seller of property may be required to disclose the presence of inherently dangerous or toxic substances notwithstanding the absence of evidence that the particular property posed a risk to health or safety when used for the buyer's purpose. The decisions, I think, are limited to the situation where the supplier *knows* of the risk,¹⁰⁶ and thus avoids, to a degree, the imposition of substantial search costs necessary to discover low probability risks. Second, both cases in which this suggestion was made involved carcinogenic risks, and we might have a judicially crafted rule which imposes an absolute safety rule, and ignores the costs of prevention, in the limited situation where the risk of cancer is present.¹⁰⁷ In *C.R.F. Holdings*, the court suggested that the issue as to the probability of the risk causing injury is a question to be determined by the market. The assumption, of course, is that if the risk is in fact a low probability risk, which most product users would not consider relevant, then the value of the property would not be adversely affected. Conversely, once it is determined that the risk exists, the court will not assess the "rationality" of the adverse market reaction to the knowledge, and the concomitant depreciation in the value of the property.¹⁰⁸

The adoption of an *absolute* duty to warn of risks no matter how low the probability of their occurrence, ignores both the cost of information acquisition and transfer, and the effect of "information overload" on consumer decision-making. As well, the

¹⁰⁶ Generally, the duty to warn is imposed in respect to risks of which the supplier knew or ought to have known. See, *supra*, footnote 85. See also, *Crossman v. Stewart* (1977), 5 C.C.L.T. 45 (B.C.S.C.). But see *Tuttahs v. Maciak* (1980), 6 Man. R. (2d) 52 (Q.B.), at p. 54 (private seller must know of risk).

¹⁰⁷ That is not to say that these decisions reflect a justifiable distinction. Legislative directions to that end are not uncommon. See *Occupational Health and Safety Act*, 29 U.S.C., ss. 651 to 678, 655(b)(5); *American Textile Manufacturers Institute v. Donovan*, 101 S.Ct. 2478 (1981), at p. 2490.

¹⁰⁸ At the same time, there is a suggestion that the non-disclosure of the risk must be a "material" factor in inducing the user to purchase the property. See *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.*, *supra*, footnote 105 at p. 391 W.W.R., p. 271 C.C.L.T. *per* Craig J.A.; *Hinchey v. Garda*, [1955] 1 D.L.R. 840, [1955] O.W.N. 48 (H.C.J.); A. K. Turner, *Estoppel by Representation*, 3rd ed. (1977), at pp. 93, 97. This, of course, permits the court to assess whether the non-disclosure was objectively relevant in influencing the purchase decision, thus reintroducing an element of probability into the assessment.

The same analysis, imposing a duty on automobile manufacturers to warn consumers of any safety-related defect of which it is aware, *regardless of the degree of risk*, has been imposed under the Motor Vehicle Safety Act, R.S.C. 1970, c. 26 (1st Supp.), as amended; *R. v. Ford Motor Co. of Canada Ltd.* (1979), 49 C.C.C. (2d) 1, 5 M.V.R. 237 (Ont. C.A.).

probability of injury is only *one* factor in determining whether a supplier ought to disclose a particular risk, and accordingly, should not be considered in an absolute fashion. It is too early to assess whether the *C.R.F. Holdings* analysis of market perception of risk will be adopted in a broader context. One hopes that it will be applied restrictively in light of the substantial inefficiencies which it generates.

The view that the probability of the risk causing injury or damage is only one factor in determining whether an obligation to disclose information should be imposed is reinforced when one assesses the costs of information transfer in the case of manufacturers of component chemicals. In most failure to warn cases, the assumption can be made that information transfer, which will often take place through package inserts or labelling, will not necessitate substantial costs. Conversely, the manufacturers of component chemicals may argue that it was not feasible to warn consumers directly, or alternatively, that the cost of the warnings would be substantial. To some degree that is true. None the less, an assessment must be made of the marginal costs of labelling the chemical container, of contractual terms and enforcement costs requiring applicators to warn homeowners, and perhaps of modification of the manufacturer's advertising and sales brochures to include warnings of the risk.

Another possible element of the standard of care expected of the chemical manufacturers relates to the obligation to disclose risks associated with unintended uses of the product, or perhaps which arise when the product is "misused".¹⁰⁹ The chemical manufacturers may argue that they are not responsible for failing to warn of risks associated with misapplication of the product. The better view, both doctrinally¹¹⁰ and in the light of accident

¹⁰⁹ Several cases make this point. See *Austin v. 3M Canada Ltd.* (1974), 54 D.L.R. (3d) 656 at p. 661, 7 O.R. (2d) 200 at p. 205 (Co. Ct.) (no duty to warn where product not dangerous in ordinary use); *Schulz v. Leaside Developments Ltd.* (1978), 90 D.L.R. (3d) 98 at p. 108, 6 C.C.L.T. 248 at p. 260 (B.C.C.A.) (no duty to warn in the case of the use of a product other than the use for which it was designed); *Ivan v. Aoco Ltd.* (1980), 5 Sask. R. 78 (C.A.). In some cases the issue is dealt with as one of causation rather than the standard of care expected of the supplier. See *Vancouver-Fraser Park District v. Olmstead* (1974), 51 D.L.R. (3d) 416, [1975] 2 S.C.R. 831.

¹¹⁰ *Crossman v. Stewart* (1977), 82 D.L.R. (3d) 677 at pp. 683, 686, 5 C.C.L.T. 45 at pp. 53, 57 (B.C.S.C.) (failure to warn of risks of improper, unintended manner of use); *Ruch v. Colonial Coach Lines Ltd.* (1965), 54 D.L.R. (2d) 491 at p. 498, [1966] 1 O.R. 621 at p. 628 (C.A.), affd 1 D.L.R. (3d) 1, [1969] S.C.R. 106 (unintended use risks must

reduction concerns, is to insist on warning of risks associated with use of the product, whether or not the use was "intended" or "designed". The only limitation, of course, is to limit the duty to warn to risks of sufficient magnitude that the costs of the warning and concerns with information overload are taken into account. Thus the courts limit the warnings to risks, whether in intended or unintended uses, which are "foreseeable", or "usual" or objectively anticipated.¹¹¹ The inquiry in the formaldehyde case must then be directed to industry knowledge of the risks of poor quality application, and thus the foreseeability and probability of "unintended" applications.

(3) Contractual Liability

The third legal issue in the formaldehyde case considered from a private law perspective is the contractual liability of the installers of the foam insulation. It is generally conceded that installers who entered into contracts to supply and install formaldehyde insulation are unlikely to have the financial resources to justify litigation which seeks to obtain compensation for large numbers of the public. None the less, this class of potential defendants is quite large, and in some cases, the installation may have been subcontracted by financially viable corporate defendants, to smaller enterprises. For the purposes of this paper I will assume that the contractual documents, if any, describe the entire legally relevant contractual relations between the parties.¹¹² In

be disclosed if "objectively anticipated"); *Labrecque v. Saskatchewan Wheat Pool* (1977), 78 D.L.R. (3d) 289, [1977] 6 W.W.R. 122 (Sask. Q.B.), *var*d 110 D.L.R. (3d) 686, [1980] 3 W.W.R. 558 (Sask. C.A.) (manufacturer liable for failure to warn of risks associated with unintended manner of use); *Vacwell Engineering Co. Ltd. v. B.D.H. Chemicals, Ltd.*, [1969] 3 All E.R. 1681 (Q.B.) (implied term to warn of hazards associated with foreseeable, albeit unintended use); *Lem v. Barotto Sports Ltd.* (1976), 69 D.L.R. (3d) 276, 1 A.R. 556 (S.C. App. Div.).

¹¹¹ It is not clear, at least to me, which standard is most likely to be chosen by a court which looks at this issue closely.

¹¹² It is true, of course, that the actual express terms of the installation contract may include salesmen's representations, representations contained in advertising brochures, the particular terms of standard form contracts, and a range of specific terms. See, e.g., Consumer Protection Act, R.S.B.C. 1979, c. 65, s. 3(2); *Murray v. Sperry Rand Corp.* (1979), 96 D.L.R. (3d) 113, 23 O.R. (2d) 456 (H.C.J.); *Leitz v. Saskatoon Drug and Stationery Co. Ltd.*; *T.C. Distributors (1970) Ltd., Third Party* (1980), 112 D.L.R. (3d) 106, 4 Sask. R. 35 (Q.B.).

It may also be possible to argue that the consumer entered into a collateral contract with the suppliers of advertising materials upon which the homeowner relied in

most cases, the contract documents will simply describe the insulation and the price. Accordingly, the supplier's contractual obligation will be defined by implied terms under provincial sales legislation,¹¹³ at common law,¹¹⁴ or perhaps under recently enacted consumer products warranty legislation.¹¹⁵ Of course, the common law implied terms can, in theory, be modified consensually, while in most provinces the legislative terms are not subject to a contrary agreement.¹¹⁶ To that extent, whether the installation and supply contract is considered to be a sales contract may still be relevant.

Apart from specific implied terms related to the service element of the installation contract, the legal right to compensation will depend upon the content of the implied conditions of merchantability and fitness for purpose. The UFFI case, it seems to me, does not permit a simple application of the implied terms.

purchasing formaldehyde insulation. See *Carlill v. The Carbolic Smoke Ball Co.*, [1892] 2 Q.B. 484; *Roberts v. Montex Development Corp.* (1979), 100 D.L.R. (3d) 660, [1979] 4 W.W.R. 306 (B.C.S.C.); *Naken v. General Motors of Canada Ltd.* (1979), 92 D.L.R. (3d) 100, 21 O.R. (2d) 780 (C.A.), rev'd 144 D.L.R. (3d) 385, 32 C.P.C. 138 (S.C.C.).

¹¹³ The implied terms of merchantability and fitness for purpose will be applicable to the contract to supply insulation if it is considered to be a sale of goods. See Sale of Goods Act, R.S.B.C. 1979, c. 370, s. 18; R.S.O. 1980, c. 462, s. 15; R.S.N.B. 1973, c. S-1, s. 15; R.S.A. 1980, c. S-2, s. 17; R.S.M. 1970, c. S10, s. 16; R.S.N.S. 1967, c. 274, s. 16; R.S. Nfld. 1970, c. 341, s. 16.

¹¹⁴ It does not seem to be relevant that the contract may be considered to be a contract for the supply of labour and materials rather than a sale of goods. Terms analogous to those implied under sales legislation will be implied at common law under the same conditions. See *G.H. Myers & Co. v. Brent Cross Service Co.*, [1934] 1 K.B. 46; *A.-G. Can. v. Laminated Structures and Holdings Ltd.* (1961), 28 D.L.R. (2d) 92 (N.S.S.C. in Banco), aff'd 32 D.L.R. (2d) 146, [1962] S.C.R. 160; *Young and Marten, Ltd. v. McManus Childs, Ltd.*, [1968] 2 All E.R. 1169 (H.L.).

¹¹⁵ See the Consumer Products Warranties Act, R.S.S. 1978, c. C-30, s. 11.4, 5. The definition of "acceptable quality" in s. 2(a) of the Act does not seem to differ significantly from the common law definition of merchantable quality. See L. J. Romero, "The Consumer Products Warranties Act", 43 Sask. L. Rev. 81 (1979), at p. 172; Romero, "The Saskatchewan Consumer Product Warranties Act and Related Issues" in J. S. Ziegel, ed., *Proceedings of the Seventh Annual Workshop on Commercial and Consumer Law* (1979), p. 32.

The New Brunswick Consumer Product Warranty and Liability Act, S.N.B. 1978, c. C-18.1 apparently re-enacts the sales implied terms. See ss. 10(1)(a), 11.

¹¹⁶ See e.g., R.S.B.C. 1979, c. 370, s. 20; See generally, Romero, *supra*, footnote 115 at pp. 95-7, 130 Sask. L. Rev.; Waddams, *supra*, footnote 45 at pp. 175-87.

At the same time, it is obvious that the standard imported through the implied warranties will be subject to infinite variation as the seller retains the ability to modify the description and price of the goods. The concept of "merchantability" is meaningless except in relation to those considerations.

As explained earlier, the vast majority of homeowners will *not* be able to demonstrate either personal injury or property damage associated with foam insulation. The only breach of contract may be the devaluation of the product and home related to a perceived risk of personal injury or property damage. Secondly, those homeowners or members of their families who have suffered injury to their health, may be members of a sub-class of the general population which reacts in an "idiosyncratic" manner to formaldehyde off-gassed products.

The concept of merchantable quality as defined in sales legislation in Canada has been articulated by the courts on the basis of two related but distinct tests. The first is that the product will be of merchantable quality if and only if "some buyers acting reasonably and fully informed of the actual condition and the quality of the product would buy the product as described, without a substantial abatement of the purchase price."¹¹⁷ The second formulation of the concept is that the product must be fit for use for at least one of the purposes for which the product as described and sold at the price for which it was sold is normally used.¹¹⁸ Once the standard is established the seller is responsible to the buyer whether or not the seller knew or could have known of the defect in the product sold.¹¹⁹ It should be obvious that the tests are conceptually indistinguishable from one another. If some buyers, fully informed of the defects in, and the quality of, the goods would buy them under the contract description without a substantial abatement of the price, it necessarily follows that the goods are reasonably fit for at least one purpose which these goods as described would commonly be used. Conversely, if the goods are fit for at least one purpose which goods of that description are normally used, then it necessarily follows that some buyers fully informed of the defect and quality of the product would buy it as described without a substantial abatement of the purchase price.

Where there is evidence that the formaldehyde insulation has

¹¹⁷ See *B. S. Brown & Son Ltd. v. Craiks Ltd.*, [1970] 1 All. E.R. 823 (H.L.). See also *Henry Kendall & Sons v. William Lillico & Sons Ltd.*, [1969] 2 A.C. 31 (H.L.), at p. 75; *Australian Knitting Mills Ltd. v. Grant* (1933), 50 C.L.R. 387 at p. 418.

¹¹⁸ See *Cammell Laird & Co. v. Manganese Bronze and Brass Ltd.*, [1934] A.C. 402 at p. 430; *Henry Kendall & Sons v. William Lillico & Sons Ltd.*, *supra*, footnote 117 at pp. 77, 97, 108, 118; *Davids Pty. Ltd. v. George Wills & Co. Ltd.*, [1957] 1 Ll.L. Rep. 203.

¹¹⁹ See *Parsons (Livestock) Ltd. v. Utley Ingham & Co. Ltd.*, [1978] Q.B. 791 at p. 800.

deteriorated to the extent that it no longer insulates, gives off formaldehyde gas or other gaseous product which has caused physical injury to the inhabitants of the home, or has caused property damage to the home of the buyer, there will be little difficulty in demonstrating a breach of the implied condition of merchantability under sales legislation, or of the analogous implied term at common law in the case of service contracts, under either of the tests described above. The difficult case will arise where, as is common, it is not possible to prove that the foam insulation has degraded to a significant degree or has caused physical injury, and there is no evidence of property damage associated with installation of the foam. In that case the plaintiff must argue that the product is not merchantable on the ground that, while the specific insulation in his house is fully adequate for its purpose and is not defective in any demonstrable fashion, no other buyers will buy the house without a substantial reduction in its purchase price. The particular insulation is not defective; rather the reputation of the product is such that he has suffered direct and consequential economic loss as a result.

On first impression, it appears possible to argue that the product is unmerchantable. In other words, one could say that in light of the reputation of the product in the market-place no buyers fully informed of that fact would have bought the foam or would buy the foam without a substantial abatement of the purchase price. The cases, however, reveal that in all cases where the product has been found unmerchantable, there has been a defect in the specific product at issue.¹²⁰ In other words, the particular subject-matter of the contract has fallen below the standard which the buyer could reasonably expect it to have. In the fact situation just described, the *particular* product is, at least in a functional sense, perfect.

There are, however, several cases involving transactions where the buyer has not been able to resell a product, not because of any inherent defect in its quality, condition, or functional characteristics, but because of legislation which prohibits the resale,¹²¹

¹²⁰ The "defect" is often assumed where the product has caused physical injury or property damage, or is not functioning adequately. At the same time, the requirement of a product "defect" is sometimes acknowledged in express terms. See the Consumer Products Warranties Act, *supra*, footnote 115, s. 11.4. See also *Australian Knitting Mills Ltd. v. Grant*, *supra*, footnote 117 where Dixon J. refers to the "hidden defects" of which a buyer is taken to know, when deciding to purchase goods.

¹²¹ See *Sumner, Permain & Co. v. Webb & Co.*, [1922] 1 K.B. 55 (C.A.); *Phoenix Distrib-*

or because of a right in a third party to enjoin the sub-sale.¹²² A realistic assessment of these cases looks to the nature of the risk assumed by the seller. In the absence of specific information relating to the buyer's intended sub-sale, its location, and perhaps the laws of that jurisdiction, it seems highly unlikely that the buyer could reasonably expect his seller to have assumed the risk that the goods will comply with the variety of, and constantly changing regulations in force in a multitude of national, state, and municipal jurisdictions. Where, however, the buyer and seller are in the same jurisdiction, or perhaps, in interprovincial trade where the applicable regulatory framework is uniform across the country, the courts have held that the seller impliedly assumed the risk of compliance with legislation permitting use or resale.¹²³

It seems, as I have suggested, that in many formaldehyde cases the only demonstrable loss is represented by the reduced economic value of the residential home, or the cost of foam removal and restoration. The argument must be made that the loss in market value of the home, and the unsaleability of the product, constitute a breach of the implied condition of merchantability on the ground that:

- (a) the defect in the product consists of an unreasonable risk of physical injury, associated with the particular good sold to the plaintiff, notwithstanding that neither the defect nor the injury is yet apparent; or
- (b) the defect in the product consists of a depreciation in market value associated with public reaction to an alleged design defect in the product.

The conceptualization of the defect as consisting of an unreasonable risk of physical injury (or perhaps property damage) is

utors Ltd. v. L.B. Clarke (London) Ltd., [1966] 2 Ll.L. Rep. 285, affd [1967] 1 Ll.L. Rep. 518.

¹²² See *Niblett Ltd. v. Confectioners' Materials Co. Ltd.*, [1921] 3 K.B. 387 (C.A.).

¹²³ See e.g., *J. Barry Winsor & Assoc. Ltd. v. Belgo Canadian Manufacturing Co. Ltd.* (1976), 76 D.L.R. (3d) 685, 32 C.P.R. (2d) 142 (B.C.C.A.), where lamps which contravened the Electrical Energy Inspection Act, R.S.B.C. 1960, c. 126, now R.S.B.C. 1979, c. 104, resulted in a breach of s. 18(a) of the Sale of Goods Act. The New Brunswick Court of Appeal held that a supplier of a lighting system which did not comply with the Electrical Installation and Inspection Act was in breach of an implied condition that the work and materials would be reasonably fit for the purpose for which they were required. *Laliberte v. Blanchard* (1980), 31 N.B.R. (2d) 275 (N.B.C.A.). See also *Wood v. Cuvelier* (1979), 34 N.S.R. (2d) 261 (S.C.T.D.), at pp. 267-8 (non-compliance with National Building Code).

appealing for several reasons. First, it recognizes that although contractual analysis assumes a bipartite relationship, the loss is associated with an alleged design defect on the part of the manufacturer. If one conceptualizes the design defect as the design of a product which is unreasonably dangerous, then recovery by a consumer against his immediate seller will depend upon proof that the product is defective in this sense.¹²⁴ If this is so, then, notwithstanding the possibility that the consumer may not be able to recover this economic loss from the manufacturer, it is not unlikely that the seller will be able to shift the loss to the manufacturer, under the wholesale supply contract.

Second, it may be undesirable, if one assumes that consumers are not indifferent between physical injury and post-injury compensation, to require that an individual suffer actual injury or property damage before being able to rely on the implied condition of merchantability in the case of a defectively designed product. The function of permitting recovery in this case is to permit the necessary repair work to be performed in order to avoid personal injury. Recovery for this economic loss in the absence of a demonstrable defect in the particular product sold will thus have to be premised on a subsidiary argument that the breach of the implied condition of merchantability has occurred, and the resulting economic loss is compensable only where the plaintiff is exposed to a present or imminent risk to health or safety.

Third, it removes the risk that a seller will be liable to compensate buyers for a fall in market value which results not from a perceived risk of personal injury (and thus a loss related to a matter within the scope of the manufacturer's responsibility as a design defect), but from the impact of extrinsic market forces which may range from an increase in the availability of substitute goods, to increased competition in the relevant industry, to information about the potential resale value of the product, to the enactment of legislation or administrative regulations prohibiting resale. In other words, the requirement that recovery for economic loss be limited to cases where there is an imminent risk of personal injury or property damage, demands proof of a relationship between the economic loss and the quality of the

¹²⁴ Implied warranty protection has been extended to design defects in some jurisdictions. See *Vandercook & Son Inc. v. Thorpe*, 395 F.2d 104 (1968).

product itself, whether by reason of a design defect or a manufacturing defect.

Whether or not a court will determine, in the case under discussion, that the loss in market value of the homes is due to an imminent or present risk to the safety of the occupants so as to render the product unmerchantable is difficult to predict. The existence of the ban under the Hazardous Products Act¹²⁵ may be used to support this view. In addition, the court may accept evidence of appraisers as to the reduction in market value, and as to the perceptions of health risks of participants in the marketplace upon which their actions are based. As well, it is obvious that expert medical testimony as to the nature and degree of the risks to health and safety presented by the product will be directly relevant to this inquiry.

This last point deserves further inquiry. The assumption I have made so far is that a plaintiff will be able to demonstrate that the *particular* product in his house poses a risk to his health.¹²⁶ It is, however, open to debate whether all insulation poses a risk to health or safety, and that the risk is simply one of degree; or whether only a small percentage of the homes, in fact, poses an unreasonable risk. In both cases, the multi-variable nature of the risk,¹²⁷ and existing technology¹²⁸ may not permit us to distinguish

¹²⁵ R.S.C. 1970, c. H-3, as amended. This reasoning was adopted by Anderson J.A. of the British Columbia Court of Appeal in *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.* (1980), 21 B.C.L.R. 345, 14 C.C.L.T. 87 (S.C.), new trial ordered 33 B.C.L.R. 291 at p. 323, 19 C.C.L.T. 263 at p. 309.

¹²⁶ The analysis of the contractual action assumes that the injury, to be relevant, must be incurred by the contracting party, and thus the only relevant risk of injury is that faced by the person who purchased the UFFI product. It is open to debate whether the risk of injury to which non-contracting parties may be exposed can be relied upon in the breach of contract action.

¹²⁷ The risk of off-gassing will vary with the temperature of the wall cavity, degradation of the component chemicals prior to installation, contaminants in the component chemicals, mixing ratio, drying rate of the foam, absolute humidity content of the air, reaction with other building materials, air flow through interior walls, air flow through exterior walls, application of the foam in locations which expose the foam to heat, degree of exposure to wind, and component chemicals which contain hydrophilic materials. See C. Shirtliffe, *Report, Exhibit 22, Hazardous Products Board of Review, Urea Formaldehyde Foam Insulation*, at pp. 6-14. These factors suggest that all houses will pose *some* degree of risk; that is, we may not be able to state categorically that certain houses are "safe" in that they do not pose a risk to health which is significantly greater than that of non-foam insulation homes.

¹²⁸ The testing systems described in the leading technical reports all suffer from the multi-variable nature of the product risk. Thus gas readings will vary considerably from

between safer and less safe homes, or between safe and dangerous homes. If there is a scientific basis for the position that some homes are safe, on a qualitatively distinct basis, while only a small percentage are "dangerous", we face the intractable problem of permitting compensation to *all* homeowners notwithstanding that the vast majority do not, in fact, possess a product which exposes them to a risk of personal injury. Alternatively, if the question of dangerousness is a question of degree, depending upon a range of interdependent variables, an award of compensation which does not vary directly with the risk, and in fact will often relate to the perceived "high risk" product, clearly results in a mis-allocation of resources, and possible over-compensation.

This analysis brings us to the second possible formulation of unmerchantability — that the "unsaleability" of the product (and the home) is itself a defect which permits the court to impose contractual liability. In either of the "risk analysis" scenarios discussed above, the supplier can argue that he has supplied a product that functions adequately, and has not caused physical injury or property damage to the contracting party. The only loss suffered by the plaintiff is represented by the unsaleability of the product. The question then becomes, to what extent has the seller assumed the risk of the market reputation of his product, related perhaps to inadequate installation or defective components installed by other commercial enterprises?

There is little doubt that "saleability" is a central concept in considering merchantability.¹²⁹ None the less, the issue is actually one of risk allocation, and it is difficult to support the view that a commercial enterprise can be taken to have assumed the risk that the "perfect" product which it supplies will retain its market value in the face of actual or potential breaches of contract and design negligence over which it has little or no effective control, and in respect of which it may not be able to obtain insurance. I am not aware of any cases which have recognized market loss *in and of itself* as a breach of the implied condition of merchantability. The concept is, of course, a traditional tool in the assessment of damages once it is determined that a breach of

season to season, day to day, among rooms in the house, among stud spaces, and over time. See Shirliffe, *supra*, footnote 127 at p. 7; Consumer Product Safety Commission, *supra*, footnote 6 at 14381-14387.

¹²⁹ *Henry Kendall & Sons v. William Lillico & Sons Ltd.*, *supra*, footnote 117 at p. 75.

contract has occurred — the loss in market value may be used to assess, in an objective fashion, the injury to the plaintiff. As well, the courts, on rare occasions, have acknowledged that depreciation in property value, caused by public prejudice or apprehension about a particular condition, even if the condition has not manifested itself, may be the subject of a damage award in nuisance cases,¹³⁰ and recently in an action in deceit.¹³¹

In all these cases, however, the action was based in nuisance, negligence or deceit, rather than contract. Thus while the cases recognize that the courts may be unwilling to assess the rationality of market behaviour in measuring damages, they clearly do not establish that depreciation in market value in and of itself is a breach of an implied contractual term. In *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.*¹³² damages were awarded for depreciation in market value arising from public apprehension over the presence of radioactive landfill. Although evidence was led that the radiation emitted was within “acceptable” standards and statistically posed “no” health risks, the court held that the loss of value due to public reluctance to be exposed to radiation, no matter how low the risk, was a loss for which the plaintiffs were entitled to be compensated in damages. The only concern of the court was that the perception was entertained by “reasonable” people and whether a potential buyer of the property would be influenced by that fact in deciding how much he would be willing to pay for the land.

¹³⁰ See *Everett v. Paschall*, 111 P. 879 (1910) (injunction granted against sanitarium construction which, while it posed no “real danger”, caused the public to perceive the existence of danger and thereby decreased the resale value of the plaintiff’s land). See also *Ferry v. Seattle*, 200 P. 336 (1921); *Cunningham v. Town of Tieton*, 374 P.2d 375 (1963). But see *Shuttleworth v. Vancouver General Hospital*, [1927] 2 D.L.R. 573, [1927] 1 W.W.R. 476 (B.C.S.C.) (mere sentiment of danger cannot support a claim in damages without concomitant tangible injury); *Clerk v. Sunset Hills*, 273 P.2d 645 (1954); *O’Laughlin v. City of Fort Gibson*, 389 P.2d 506 (1964); *Thomas Christopher Cowper Essex v. The Local Board for the District of Acton in the County of Middlesex* (1889), 14 A.C. 153 (H.L.); *Veitch v. Mount Pearl (No. 2)* (1980), 25 Nfld. & P.E.I.R. 307 (Nfld. S.C.T.D.) (no recovery until perceived risk manifests itself).

Recovery will not, however, be allowed where the economic loss is not proved, or is transitional. See *Butt v. City of Oshawa*, [1926] 4 D.L.R. 1138, 59 O.L.R. 520 (C.A.); *Wigle v. Township of Gosfield South* (1912), 2 D.L.R. 619 (Ont. C.A.); *Godfrey v. Good Rich Refining Co. Ltd.*, [1940] 2 D.L.R. 164, [1940] O.R. 190 (C.A.); *Culp and Hart v. Township of East York & Metropolitan Toronto* (1956), 6 D.L.R. (2d) 417, [1956] O.R. 983 (H.C.), affd 9 D.L.R. (2d) 749 (Ont. C.A.).

¹³¹ See *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.*, *supra*, footnote 125 at p. 320 B.C.L.R., p. 304 C.C.L.T.

¹³² *Supra*, footnote 125.

In conclusion, it is reasonably clear, where a plaintiff can demonstrate physical injury or property damage caused by the installation or presence of urea formaldehyde foam insulation, that an action for breach of the implied condition of merchantable quality against the installer will have a strong probability of success. Where, however, a plaintiff has not suffered actual physical injury or property damage, or as is more likely, is unable to demonstrate the necessary causal relationship between the injury and the insulation, recovery for the "cost of repair" or diminution in market value will pose considerable problems.

In addition to the implied condition of merchantable quality, a seller impliedly promises that the subject matter of the contract will be "reasonably fit for the particular purpose which is made known to him by the buyer." For the purposes of this discussion I will assume that the section is applicable to the transaction. Three issues present themselves for consideration in an analysis of the concept of fitness for purpose. First, if the alleged breach of the implied condition consists of product shrinkage and inadequate insulating properties, to what extent must the product have deteriorated before a breach will be found? Second, can the alleged breach of the implied condition consist of actual personal injury or product damage? Third, can a purchaser who is unable to resell his house, but cannot demonstrate inadequate performance, personal injury, or property damage, recover compensation for an alleged breach of the condition?

The courts have held that where a product has only one particular purpose, in this case as home insulation, the product must be "reasonably fit" for that purpose. What is meant by reasonable fitness depends upon the circumstances of the particular contract, but the nature of the implied promise appears to be that the seller undertakes to supply a product which will perform adequately — this aspect of fitness for purpose focuses on function. As Lord Reid said in *Kendall v. Lillico*, "the seller must supply goods reasonably fit to enable the buyer to carry out his purpose in any normal way",¹³³ and inadequate performance has been the foundation for recovery for breach in a number of cases.¹³⁴ At the same time, it is well recognized that the product

¹³³ [1969] 2 A.C. 31 (H.L.), at p. 80.

¹³⁴ See, e.g., *Murray v. Sperry Rand Corp.* (1979), 96 D.L.R. (3d) 113, 23 O.R. (2d) 456;

need not be *perfectly* fit; rather, as the section itself informs us, the product need only be *reasonably* fit. Thus in *Bartlett v. Sidney Marcus Motors*,¹³⁵ a case involving a malfunctioning automobile, the court suggested that a used car which was far from perfect and required a great deal of work did not result in a breach of the implied condition of fitness, since in light of the description and price of the good, it was "reasonably fit" for the purpose of being driven along the road.¹³⁶ A recent decision in *Labrecque v. Saskatchewan Wheat Pool and Eli Lilly Co. Ltd.*¹³⁷ illustrates the difficulties presented in determining reasonable fitness for purpose in the context of defective performance. In that case the Saskatchewan Court of Appeal held that a herbicide was not unfit even though a herbicide-treated crop yielded considerably less flax than an untreated crop. The point is that when one examines adequacy of performance in the case of formaldehyde insulation one must assess whether, in the particular case, the insulation has deteriorated to a sufficient degree to render the product unfit. It would serve no purpose to attempt to define, on a percentage basis, what the critical degree of shrinkage (either in linear or volumetric terms), or failure in insulating properties, might be.

There are two additional points which must be made. The first is that in the context of fitness for purpose it is not necessary to demonstrate a product specific "defect" in the goods sold. The focus of the analysis is on function, and if the product fails to perform reasonably well, the seller has breached the implied condition.¹³⁸ The second point is that a plaintiff who can only demonstrate inadequate performance may face difficulty in obtaining damages for certain kinds of losses including personal injury claims, property damage and economic loss. Applying

Mack v. Struik (1963), 43 D.L.R. (2d) 763, 45 W.W.R. 605 (Sask. Q.B.). The test used in *Cammel Laird & Co. Ltd. v. The Manganese Bronze & Brass Co., Ltd.*, [1934] A.C. 402 (H.L.), and adopted in *Cehave N.V. v. Bremer Handelsgesellschaft m.b.H.*, [1975] 3 All E.R. 739 (C.A.) is essentially that the product will meet the implied condition if it reasonably performs its intended function.

¹³⁵ [1965] 1 W.L.R. 1013. This reasoning was expressly adopted in *Peters v. Parkway Mercury Sales Ltd.* (1975), 58 D.L.R. (3d) 128, 10 N.B.R. (2d) 703 (S.C. App. Div.).

¹³⁶ See *Kendall v. Lillico*, *supra*, footnote 133 at p. 115 *per* Lord Pearce.

¹³⁷ (1980), 110 D.L.R. (3d) 686, [1980] 3 W.W.R. 558 (Sask. C.A.), *affd* in part 78 D.L.R. (3d) 289, [1977] 6 W.W.R. 122 (Sask. Q.B.).

¹³⁸ See *Bristol Tramways v. Fiat Motors Ltd.*, [1910] 2 K.B. 831 (C.A.). Similarly, the House of Lords in *Council of the Shire of Ashford v. Dependable Motors Pty. Ltd.*, [1961] A.C. 336 held that tractors were unfit when they could not perform construction work.

traditional rules of remoteness in contract law, the plaintiff will have to demonstrate that these kinds of losses (albeit not their extent)¹³⁹ were reasonably within the contemplation of the defendant as "liable" to result from the breach of contract, or perhaps as a "not unlikely" consequence of the breach.¹⁴⁰ If the breach consists of the inadequate insulating properties of the foam, this remoteness limitation may pose an additional hurdle to recovery for contractual risks other than increased heating costs.

The concept of reasonable fitness has also been applied where the product sold has caused physical damage, and where the defective good is unsafe.¹⁴¹ In all of these cases, however, the *specific* product sold was defective and actual physical injury or property damage occurred.¹⁴² It is clear, however, that the implied condition of fitness for purpose does not require that the product be perfectly safe or perform in a perfect fashion for all purposes. In this respect, the case law indicates that the court will take into account the severity and nature of the injury suffered by the plaintiff, and the probability of the injury occurring, in determining whether the implied condition has been met.¹⁴³

The final point which may be made in considering the implied condition of reasonable fitness for purpose as related to safety and property damage, is that in several cases the courts have suggested that a product is not reasonably fit for its intended purpose unless the risks presented by the product in ordinary or normal use are properly disclosed either through labels or adequate warnings.¹⁴⁴ Again, however, these cases involved

¹³⁹ See *Wroth v. Tyler*, [1973] 1 All E.R. 897 (Ch); *Asamera Oil Corp. Ltd. v. Sea Oil & General Corp.* (1978), 89 D.L.R. (3d) 1, [1979] 1 S.C.R. 633.

¹⁴⁰ *Hadley v. Baxendale* (1854), 9 Ex. 341, 156 E.R. 145; *Victoria Laundry Ltd. v. Newman Industries Ltd.*, *Coulson & Co. Ltd.*, *Third Party*, [1949] 1 All E.R. 997 (C.A.); *Koufos v. C. Czarnikow Ltd.*, [1969] 1 A.C. 350 (H.L.).

¹⁴¹ For example *Yelland v. National Cafe*, [1955] 5 D.L.R. 560, 16 W.W.R. 529 (Sask. C.A.) (unsound pop bottle exploded, injuring purchaser); *Ashington Piggeries Ltd. v. Christopher Hill Ltd.*, [1972] A.C. 441, [1971] 1 All E.R. 847 (H.L.) (animal foodstuffs toxic to mink); *Buckley v. Lever Brothers Ltd.*, [1953] 4 D.L.R. 16, [1953] O.R. 704 (H.C.) (plaintiff's eye injured by clothespin breaking); *Curtis v. Rideout* (1980), 27 Nfld. & P.E.I.R. 392 (Nfld. S.C.T.D.), at p. 408.

¹⁴² *Connop v. Canadian Car Division Hawker Siddeley Canada Ltd.*; *Witco Chemicals Ltd.*, *Third Party* (1978), 98 D.L.R. 747, 24 O.R. (2d) 593 (C.A.); *Farmer v. Canada Packers Ltd.* (1956), 6 D.L.R. (2d) 63, [1956] O.R. 657 (H.C.); *Willis v. FMC Machinery and Chemicals Ltd.* (1976), 68 D.L.R. (3d) 127, 11 Nfld. & P.E.I.R. 361 (P.E.I.S.C.).

¹⁴³ *Kendall (Henry) & Sons v. Lillico & Sons, Ltd.*, *supra*, footnote 136 at p. 166.

¹⁴⁴ *Vacwell Engineering Co. Ltd. v. B.D.H. Chemicals Ltd.*, [1969] 3 All E.R. 1681

actual physical injury or property damage suffered by the plaintiff.

Where it cannot be demonstrated that the product has caused physical injury or property damage, and where the product does in fact insulate the buyer's residence, it would be difficult to argue that the product is not reasonably fit for its intended purpose simply on the grounds that no other buyer would buy the home without a significant reduction in its market value. The point here is identical to that described above in the discussion of merchantability. It is unlikely that the seller will be found in breach of an implied obligation that the goods be reasonably fit for their intended purpose simply by virtue of the depreciation of the market value of the home in which the product is installed.

Analogous to the "non-defective" goods cases discussed above in relation to the concept of merchantable quality are cases in which the goods, although effective in performing the function for which they were intended, caused property damage when they interacted with other products. Thus, in *Vacwell Engineering Co. Ltd. v. B.D.H. Chemicals Ltd.*,¹⁴⁵ a seller was held liable for breach of the implied condition of fitness for purpose when a chemical did not carry a warning of explosion hazards — in that case an explosion occurred upon the chemical's contact with water. Another case, similar to *Vacwell*, is *Willis v. FMC Machinery & Chemicals Ltd.*¹⁴⁶ where a herbicide, though effective for its purpose, was held not reasonably fit where it was discovered to be unsafe when used with certain insecticides. Again, these cases involved actual physical damage to the goods sold or to other property. There is, however, at least one case which recognized a homeowner's fear of injury as a factor in determining that the product was not reasonably fit for its intended purpose.¹⁴⁷ Even in this case, however, the mobile home purchased was held unfit due *in part* to the owner's fear of the risk of electrical fires, and *in part* because of manufacturing defects which interfered with the plaintiff's use of the mobile home.

(Q.B.), *var*d [1971] 1 Q.B. 111 (C.A.); *Willis v. FMC Machinery and Chemicals Ltd.*, *supra*, footnote 142; but see *Lem v. Barotto Sports Ltd.* (1976), 69 D.L.R. (3d) 276 at p. 290, 1 A.R. 556 at p. 577 (S.C. App. Div.). A similar analysis has been applied to the concept of merchantability by Pearce L.J. in *Kendall v. Lillico*, *supra*, footnote 136 at p. 119.

¹⁴⁵ *Supra*, footnote 144.

¹⁴⁶ *Supra*, footnote 142.

¹⁴⁷ *Doucette and Doucette v. Commodore Mobile Homes Ltd.* (1976), 22 N.S.R. (2d) 598 (S.C.T.D.), at p. 607.

In conclusion, an analysis of the implied condition of fitness for purpose in sales legislation as it applies to urea formaldehyde foam insulation is quite similar to the analysis of the implied condition of merchantability. Where a particular homeowner is able to demonstrate a causal link between property damage or personal injury and the existence of foam insulation, or where the insulation is not performing its insulating function, recovery under the implied condition, assuming it is applicable on the facts, will be relatively straightforward. Where, however, those facts do not exist, or cannot be proved, recovery for economic loss associated only with market reputation presents the same conceptual and policy considerations discussed at length in the preceding discussion of merchantability. To allow recovery is to hold that sellers impliedly assume the risk that changes in the reputation of the product, and its market value, will not result in economic loss to a buyer. In the absence of a causal link between the loss in reputation and market value and a demonstrable risk of personal injury or property damage in a specific case, I perceive substantial hurdles in persuading a court that this should be so.

Even where physical injury has been suffered, and a causal connection demonstrated, the suppliers may argue that the injury is an idiosyncratic reaction to the product. The injuries suffered by homeowners, assuming for the purposes of argument that they can be proved to be causally related to the foam insulation, may take several forms. Medical evidence¹⁴⁸ suggests that individuals exposed to a formaldehyde insulation environment may experience:

- (a) temporary irritation of eyes, nasal cavities, and coughing, nasal congestion and similar acute irritant effects;
- (b) chronic irritant effects including breathing difficulties, persistent coughs, chest congestion and asthma;
- (c) allergic reactions to formaldehyde gas; and
- (d) specific chemical sensitization to formaldehyde and general non-specific chemical sensitization.

It might be argued that these symptoms are suffered by an “idiosyncratic” sub-category of homeowners and accordingly, that

¹⁴⁸ See *supra*, footnote 12.

the implied conditions of sales legislation do not apply. The traditional analysis suggests that a product which causes injury to a "non-appreciable" subclass of buyers will still be of merchantable quality.¹⁴⁹ Similarly, where the buyer's reaction can be considered "abnormal", then the seller can argue that he has supplied a product which is reasonably fit for "normal" purposes, and thus has not breached the implied condition of fitness for purpose.¹⁵⁰ The formaldehyde homeowner, at least for the purposes of this discussion, can be taken to be ignorant of his peculiar sensitivity to the formaldehyde foam environment; thus we need not be concerned with the questions of risk assumption, contributory negligence, or particular sub-purposes.¹⁵¹

The argument that the seller of consumer products should not be responsible for low probability risks, whether or not it has merit, would not seem to be appropriate in the UFFI case. First, there is the accepted scientific argument to the effect that there is no demonstrated level of formaldehyde exposure which is inherently safe,¹⁵² or put another way, "there is no population threshold for the irritant effects of formaldehyde".¹⁵³ It seems that all individuals will experience some irritant effects of formaldehyde if the duration of exposure and gas concentrations are sufficiently severe. At the same time, a significant percentage of the population, estimated at 10-12%, may have hyper-reactive airways,¹⁵⁴ which may result in a low threshold at which irritation would be experienced, and which may exacerbate the severity of the adverse reaction. The percentage of the population which might experience chronic irritant, allergenic and chemical susceptibility effects does not appear to have been demonstrated conclusively.¹⁵⁵ In light of the "general toxicity" of formaldehyde

¹⁴⁹ This concept is most obvious in the American cases. *Howard v. Avon Prod. Inc.*, 395 P.2d 1007 (1964); *Ern v. Revlon, Inc.*, 459 S.W.2d 261 (1970). The standard has, it seems, been relaxed in recent cases. See M.G. Dixon, *Drug Product Liability* (1981), Chapter 9.05 at 9-30 — 9-34. See also, L. R. Frumer and M. I. Friedman, *Products Liability* (1982), Vol. 3, Chapter 29.03.

¹⁵⁰ See *Griffiths v. Peter Conway, Ltd.*, [1939] 1 All E.R. 685 (C.A.).

¹⁵¹ *Ingham v. Emes*, [1955] 2 All E.R. 740 (C.A.).

¹⁵² *Final Report* of the Department of National Health and Welfare Expert Advisory Committee on Urea Formaldehyde Foam Insulation (1981), at p. 9.

¹⁵³ Consumer Product Safety Commission, Ban of Urea Formaldehyde Foam Insulation, Withdrawal of Proposed Information Labelling Rule, and Denial of Petition to Issue a Standard, Federal Register, Vol. 47, No. 64, 14366 at 14386.

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*; B. Small, *supra*, footnote 12 at pp. 69-73.

gas, and the significant percentages of the population which experience adverse health effects of varying degrees of severity depending on the level and duration of exposure, the possible argument that the seller ought not to be held responsible for alleged idiosyncratic reactions or "abnormal purposes" to which the insulation will be put does not seem to be persuasive.

(4) Trade Practice Legislation

The final avenue available to homeowners seeking compensation from installers and chemical manufacturers may be trade practice legislation now in force in six provinces, which seeks to regulate deceptive marketing practices through a mix of private and public law remedies.¹⁵⁶ The development of trade practice legislation in Canada¹⁵⁷ has been directed to the regulation of consumer misperception and deception regarding product quality and performance. This view is reinforced by the shopping list of deceptive practices which generally relate to the creation of consumer misperceptions respecting product quality rather than safety.¹⁵⁸ None the less, consumer misperception of safety will certainly influence the value of or at least the consumers' willingness to pay for the product,¹⁵⁹ and the statutory definitions include references to performance characteristics¹⁶⁰ and quality,¹⁶¹ which, in the case of urea formaldehyde foam insula-

¹⁵⁶ See Business Practices Act, R.S.O. 1980, c. 55; Trade Practices Act, S. Nfld. 1978, c. 10; Business Practices Act, S. P.E.I. 1977, c. 31; Unfair Trade Practices Act, R.S.A. 1980, c. U-3; Trade Practice Act, R.S.B.C. 1979, c. 406 as amended; Consumer Protection Act, S.Q. 1978, c. 9.

¹⁵⁷ See M. J. Trebilcock et al., *Proposed Policy Directions for the Reform of the Regulation of Unfair Trade Practices in Canada*, Vol. I (1976), at pp. 1-12; W. A. W. Neilson, "Administrative Remedies: The Canadian Experience with Assurances of Voluntary Compliance in Provincial Trade Practices Legislation", 19 Osgoode Hall L.J. 153 (1981), at pp. 168-74 and 189-98; E. P. Belobaba, "Unfair Trade Practices Legislation: Symbolism and Substance in Consumer Protection", 15 Osgoode Hall L.J. 327 (1977).

¹⁵⁸ Alta. Act, s. 4(1)(d); P.E.I. Act, s. 3(a), Nfld. Act, s. 5(1); Ont. Act, s. 2; B.C. Act, s. 3(3). The enforcement practices of the provincial governments reflects this emphasis as well. See Neilson, *supra*, footnote 157; see also, E. P. Belobaba, "Some Features of a Model Consumer Trade Practices Act", in *Proceedings of the Seventh Annual Workshop on Commercial and Consumer Law* (1979), at pp. 1-9.

¹⁵⁹ The point is incontestable if one assumes that consumers are indifferent at least to some degree, between the risk of personal injury and a reduction in product cost. See Guss, *supra*, footnote 74 at p. 159; J. A. Ordover, "Products Liability in Markets with Heterogenous Consumers", 8 J. of Leg. Stud. 505 (1979).

¹⁶⁰ B.C. Act, s. 3(3)(a); Ont. Act, s. 2(a)(i); P.E.I. Act, s. 3(a)(i); Nfld. Act, s. 5(1)(a); Alta. Act, s. 4(d)(i).

¹⁶¹ B.C. Act, s. 3(3)(c); Ont. Act, s. 2(a)(iii); P.E.I. Act, s. 3(a)(iii); Nfld. Act, s. 5(1)(c); Alta. Act, s. 4(d)(iii).

tion, would include defective performance or inadequate quality involving a risk of personal injury or property damage as well as reduced insulating characteristics.

Trade practice legislation, depending of course on the province within which the action is brought, offers considerable advantages over private law contract and tort actions described earlier. These advantages relate to the class of potential defendants, the imposition of absolute or strict liability against non-direct suppliers, the establishment of an objective standard of "wrongfulness", and the availability of economic loss compensation against non-direct suppliers.

Trade practice legislation in all provinces establishes the concept of an unfair or deceptive act, the commission of which will give rise to civil liability and perhaps the application of regulatory sanctions,¹⁶² and the British Columbia, Alberta, Ontario and Newfoundland Acts refer to non-disclosure or failure to disclose as deceptive acts.¹⁶³ The marketing and installation of foam insulation may have taken place under circumstances where the alleged deceptive act took the form of a failure to disclose information as to the risks associated with use of the product. In addition, the argument can be made that the "marketing" of a product is "conduct"¹⁶⁴ which will be considered deceptive, where the qualities and performance characteristics of the product do not coincide with reasonable consumer expectations.¹⁶⁵

The implications of establishing non-disclosure or marketing conduct as deceptive acts¹⁶⁶ (where the deception consists of a failure to correct an existing consumer perception regarding the safety of a product) are provocative. First, the supplier of defective products becomes liable under trade practice legislation

¹⁶² See Belobaba, *supra*, footnote 157 at pp. 344-8.

¹⁶³ B.C. Act, s. 3(1)(a), (3)(r); Alta Act, s. 4(1)(i); Ont. Act, s. 2(a)(xiii); Nfld. Act, s. 5(1).

¹⁶⁴ See B.C. Act, s. 3(1)(b); Alta Act, s. 4(1)(d).

¹⁶⁵ See G. Q. Taperell, *Trade Practices and Consumer Protection*, 2nd ed. (1978), p. 494; Turner, *The Law Relating to Estoppel by Representation*, 3rd ed. (London, Butterworths, 1977), pp. 46-7; *Bodger v. Nicholls* (1873), 28 L.T. (N.S.) 441; *Mullet v. Mason* (1866), L.R. 1 C.P. 559 at p. 563; *C.R.F. Holdings Ltd. v. Fundy Chemical International Ltd.*, [1982] 2 W.W.R. 385, 19 C.C.L.T. 263 (B.C.C.A.).

¹⁶⁶ See *Givens v. C.V. Holland (Holdings) Pty.* (1977), A.T.P.R. 40-029; *Jacob Siegel v. F.T.C.*, 327 U.S. 608 (1946); *Weitman v. Katies* (1977), A.T.P.R. 40-041.

for loss or damage resulting from the deceptive act. Second, as we shall see, liability under the Act is imposed on suppliers who are not in a contractual relationship with the injured party. And third, liability under the Act is strict (or perhaps absolute). This analysis of trade practice legislation may establish a statutory strict products liability claim for products which are "defective", in so far as their performance or safety characteristics do not coincide with consumer expectations.¹⁶⁷

An alternative argument can be made which establishes that particular information distributed by direct and non-direct suppliers was deceptive in misrepresenting the safety characteristics of the product, or by failing to disclose risks.¹⁶⁸ While there is no logical difficulty with applying trade practice legislation in this fashion, the benefits to the public represented by this approach are limited. Each consumer who seeks to rely on the commission of the deceptive act would have to demonstrate a causal relationship between the specific product informational material and his loss. At the very least, this will require proof that the consumer saw or was otherwise aware of the specific piece of promotional material found to be deceptive.¹⁶⁹

In both the "pure" products liability case and the positive misrepresentation case, the consumer will be looking to impose liability on both contractual (direct) and non-contractual (non-direct) suppliers. Both Alberta and British Columbia have apparently abolished the privity doctrine in the context of the distribution of goods by commercial enterprises.¹⁷⁰ In Ontario, however, the potential defendants are limited to those suppliers

¹⁶⁷ The application of trade practice legislation to products liability cases presumes that non-disclosure, or marketing conduct, where the result is to leave consumers under a misapprehension about the safety characteristics of a product, is a deceptive act. This is the case in most provinces. See *supra*, footnote 163. See also *Kirchner v. F.T.C.*, 337 F.2d 751 (1964); *J.B. Williams Co. v. F.T.C.*, 381 F.2d 884 (1967); *Director of Trade Practices v. Household Finance Corp. of Canada*, [1977] 3 W.W.R. 390, 33 C.P.R. (2d) 284 (B.C.C.A.); *Waltham Watch Co. v. F.T.C.*, 318 F.2d 28 (1963); *Simeon Management Corp. v. F.T.C.*, 579 F.2d 1137 (1978).

¹⁶⁸ An example of this might include a sales brochure prepared by one chemical manufacturer which, where it refers to toxicity, simply states that installers need not wear masks while applying the product. (Brochure on file at University of British Columbia, Faculty of Law.) The liability in this case is based on positive acts of information dissemination.

¹⁶⁹ Query: can "person" in s. 3 of the British Columbia Act be distinguished from "consumer" as defined in s. 1 of the Act?

¹⁷⁰ B.C. Act, s. 1, definition of supplier; Alta Act, s. 1(h).

who "make" a representation, statement, offer, request or proposal relating to consumer goods or services.¹⁷¹ While the privity restriction would seem to be implicitly avoided, it would still seem to be necessary to demonstrate that a particular supplier engaged in positive information dissemination activities with respect to the product in question. The mere supply of a consumer good to an intermediate supplier would appear to be insufficient in Ontario. In Newfoundland, the term "supplier" is defined to include non-direct suppliers who "offer or advertise" the sale of consumer goods to a consumer. Again it would seem to be necessary to demonstrate that the supplier engaged in information dissemination.¹⁷²

One significant difficulty which may be faced by potential users of provincial trade practice legislation, even in jurisdictions which apparently have abolished the privity requirement, relates to the definition of the class of defendants. While vertical privity may have been abolished, it is still possible to argue that the manufacturers of the chemicals from which the foam is produced were not, simply by manufacturing the components, engaged in the supply of a consumer product, and thus do not come within the ambit of either the British Columbia or Alberta Acts. In the absence of proof of specific manufacturer advertising or promotional activities the argument can be made that component manufacturers were not engaged in the supply of the subject-matter of a consumer transaction under the British Columbia Act, nor did they manufacture, assemble or produce goods that are a subject-matter of a consumer transaction under the Alberta Act. It could be argued, however, that the control exercised by the component manufacturer over the consumer transaction, through ownership of the application patent, and through contractual terms detailing the installer's performance of the consumer transaction, would permit the court to say that the component manufacturer promoted, or otherwise participated or engaged in, the supply of a consumer product.

The nature of the deceptive or unfair act under trade practice legislation is that it "deceive or mislead"¹⁷³ — the "defect" in the

¹⁷¹ Ont. Act, s. 4(3). The same would seem to be true in Prince Edward Island. See P.E.I. Act, s. 4(2).

¹⁷² Nfld. Act, s. 2(g).

¹⁷³ See B.C. Act, s. 3(1); Alta Act, s. 4(1)(d).

product liability trade practice action is the disappointment of consumer expectations rather than the provision of an “unreasonably dangerous product”. The hypothetical normal expectation of consumers making purchase decisions will, I suspect, be judicially defined as contemplating that the product will not cause physical injury or property damage, or perhaps that the product will not pose an unreasonable risk of physical injury or property damage.¹⁷⁴

Perhaps the singular difference between trade practice act products liability and the design defect or failure to warn liability discussed earlier involves the standard of deceptiveness demanded of the offending activity. In British Columbia, the offending conduct, or non-disclosure, must have the capability, tendency or effect of misleading a consumer.¹⁷⁵ In Ontario, the complainant must demonstrate that an individual consumer has been misled in fact,¹⁷⁶ while Alberta seems to have adopted a compromise — the deceptive act must have the effect or might reasonably have the effect of deceiving or misleading a consumer.¹⁷⁷ The adoption of an *objective* test of deception in British Columbia and Alberta, suggests that actions in both provinces would require that the violation of the Act be premised on a demonstration that some consumers might be misled by the representation. In the remaining provinces, the individual plaintiff bringing the action would have to demonstrate that he was misled in fact. The British Columbia and Alberta objective test of deceptiveness affords the courts considerable flexibility in determining the critical percentage of consumers who would have to have their expectations disappointed before the product would be considered defective,¹⁷⁸ or perhaps in deciding upon the level

¹⁷⁴ Where the normal expectations of consumers are that the product is “safe” then the supply of an “unreasonably dangerous” product without disclosure of the risk may be a deceptive act. See *Royal Oil Corp. v. F.T.C.*, 262 F.2d 741 (1959); *Mohawk Refining Corp. v. F.T.C.*, 263 F.2d 818 at p. 821 (1959); *Fox Film Corp. v. F.T.C.*, 296 F. 353 (1924); *Spradling v. Williams*, 553 S.W.2d 143 (1977); *James v. Spartelli*, 399 A.2d 1047 (1979); *R. v. Pharmo Products Ltd. (No. 3)* (1973), 17 C.C.C. (2d) 335 at p. 343, 16 C.P.R.(2d) 291 at p. 299 (Ont. Co. Ct.).

¹⁷⁵ B.C. Act, s. 3(1).

¹⁷⁶ Ont. Act, s. 4(1). See also, Nfld. Act, s. 5(1); P.E.I. Act, s. 5(1).

¹⁷⁷ Alta Act, s. 4(1)(d).

¹⁷⁸ See *Charles of the Ritz v. F.T.C.*, 143 F.2d. 676 (1944) (requiring an “appreciable” segment of the public to be misled). See H. Beales, R. Craswell and S. Salop, “The Efficient Regulation of Consumer Information”, 24 J. of L. and Econ. 491 (1981), at p.

of sophistication or naivety which should be impressed upon the hypothetical consumer into whose hypothetical expectations the court is inquiring. In British Columbia, under trade practice legislation which does not require the court to assess deceptiveness in terms of the reasonable consumer, the courts have suggested that the conduct need only "tend to lead a consumer into making an error of judgment"¹⁷⁹ and the hypothetical consumer against whom this assessment is made is the unsuspicious, credulous and naive consumer.¹⁸⁰ The test, of course, is objective.¹⁸¹

The explanation of these different formulations of defectiveness is legislative disagreement upon the optimal amount of information which should be acquired and transmitted by product suppliers.¹⁸² Consumers would not be willing to pay for "perfect information" even if they could use it in their decisions to purchase a consumer product. Recognizing this, the courts have adopted the view that the information must be valuable or material to a sufficient number of consumers, thereby permitting one to draw the conclusion that the consumers would be willing to pay the producer of the information the costs of additional information production. The only difficulty with this approach in the trade practice act model of product liability and information

497; *Firestone Tire & Rubber Co. v. F.T.C.*, 481 F.2d 246 (1973), at p. 249 cert. denied 414 U.S. 1112 (1973).

¹⁷⁹ See *Director of Trade Practices v. Household Finance Corporation*, *supra*, footnote 167 at p. 391 W.W.R., p. 284 C.P.R.; *Weitman v. Katies Ltd.*, *supra*, footnote 166.

¹⁸⁰ *Stubbe v. P.F. Collier & Son Ltd.* (No. 2) (1977), 74 D.L.R. (3d) 605, 30 C.P.R. (2d) 216 (B.C.S.C.), *var*d 85 D.L.R. (3d) 77, 41 C.P.R. (2d) 47 (B.C.S.C.). A similar standard has been adopted under analogous legislation in Australia, the United States, and under the federal Combines Investigation Act. See, *Keehn v. Medical Benefits Fund of Australia Ltd.* (1977), 14 A.L.R. 77 at p. 81 (ordinary member of the public would be led into error); *S.R.W. Pty. Ltd. v. Sneddon* (1972), 72 A.R. (N.S.W.) 17 at p. 28 (public includes the ingenuous, uneducated and inexperienced; advertiser not entitled to assume that consumer will supply omitted facts); *World Series Cricket Ltd. v. Parish* (1977), 16 A.L.R. 181 at p. 203 (conduct held misleading if it had the tendency to mislead the ignorant and gullible); *Florence Mfg. Co. v. J.C. Dowd & Co.*, 178 F. 73 at p. 75 (1910) (law made for the protection of the ignorant, unthinking and credulous); *R. v. Imperial Tobacco Products Ltd.* (1971), 22 D.L.R. (3d) 51, 4 C.C.C. (2d) 423 (Alta. S.C. App. Div.).

¹⁸¹ See *Stubbe v. P.F. Collier & Son Ltd.* (No.2), *supra*, footnote 180; *R. v. Belmont Motors Ltd. and Ritchie Motors Ltd.* (1978), 7 B.C.L.R. 225 (Co. Ct.), at p. 230; *Sterling v. T.P.C.* (1981), 35 A.L.R. 59; *Royal Oil Corp. v. F.T.C.*, 262 F.2d 741 (1959); *Progress Tailoring Co. v. F.T.C.*, 348 U.S. 940 (1955) (surveys admissible as evidence of deception); *Hornsby Building Information Centre v. Sydney Building Information Centre* (1978), 18 A.L.R. 639 at p. 651.

¹⁸² See Beales, Craswell and Salop, *supra*, footnote 178 at pp. 491-7; Stigler, *supra*, footnote 73.

disclosure is that the test of deception would seem to reflect accurately only one variable (the degree or likelihood of consumer deception, perhaps on a percentage basis) influencing the value of the information. Put another way, the value of the information in terms of its risk-reduction function is only reflected in the rule that the information must have *some* risk-reduction functions (*i.e.*, that it be "material", or that it "tend to lead to an error", or that it affects a consumer decision). The *degree* of materiality (*i.e.*, the value of the information to consumers through risk reduction or more accurate pricing) would thus seem to be irrelevant in establishing the commission of a deceptive act. On the other hand, it could be argued that the provisions regulating individual recovery introduce this element to a degree which might lead to an underproduction of information.¹⁸³ The point is that the standard of deceptiveness should not only relate to the percentage of consumers whose expectations are not met (*i.e.*, who are deceived); it should also relate to the magnitude of the potential mistake.¹⁸⁴

A critical issue in the definition of a products liability concept under trade practice legislation involves the decision as to whether liability should be strict or whether responsibility for consumer misperception should rest upon proof of fault or negligence. The cases which have addressed this issue indicate that it is not necessary to demonstrate an intention to deceive or knowledge of the inaccuracy of consumer perception.¹⁸⁵ The issue

¹⁸³ Recovery of damages under the Acts requires that the individual consumer has suffered loss or damage *due to* an unfair practice, Alta Act, s. 11(1)(b); *by reason of* the deceptive act or practice, B.C. Act, s. 22(1)(a), P.E.I. Act, s. 5(1), Ont. Act, s. 4(1); or *as a result of* the deceptive act, Nfld. Act, s. 14(1).

¹⁸⁴ See Stigler, *supra*, footnote 73; E. R. Jordan and P. H. Rubin, "The Economic Analysis of the Law of False Advertising", 8 J. of Leg. Stud. 527 (1979).

¹⁸⁵ *Findlay v. Couldwell* (1976), 69 D.L.R. (3d) 320, [1976] 5 W.W.R. 340 (B.C.S.C.); *Director of Trade Practices v. Household Finance Corp.*, *supra*, footnote 179; *Subbe v. P.F. Collier & Son Ltd. (No. 2)*, *supra*, footnote 180 at p. 618 D.L.R., p. 230 C.P.R.; *Hornsby Building Information Centre v. Sydney Building Information Centre* (1978), 18 A.L.R. 639; *Dairy Vale Metro Co-operative Ltd. v. Brownes Dairy* (1981), 35 A.L.R. 494; *F.T.C. v. Algoma*, 291 U.S. 67 (1933); *Merck & Co. v. F.T.C.*, 392 F.2d 921 (1968); *State of Idaho v. Master Distributors Incorp.*, 615 P.2d 116 (1980); *Hyder-Ingram Chevrolet Inc. v. Kyle Kutech*, 612 S.W.2d 687 (1981); *Hornsby Building Information Centre v. Sydney Building Information Centre* (1978), 18 A.L.R. 639; *Puxu Pty. Ltd. v. Parkdale Custom Built Furniture* (1980), 31 A.L.R. 73.

It should be noted, however, that the Alberta Act apparently requires, in the case of non-disclosure, that the supplier know of the defect, and of the consumer's lack of knowledge. Alta. Act, s. 4(1)(c).

of negligence, however, has not been dealt with directly. The obvious argument can be made that the supplier of consumer goods should be responsible only when the misperception of the consumers could have been corrected through the provision of information at a marginal cost which does not exceed the marginal benefit to consumers concomitant with the supply of information. As well, one would want to compare the supplier's cost of information production and transfer with the cost of accident avoidance measures available to the consumers, whether through consumer generated information or direct accident avoidance behaviour. Alternatively, if one is willing to make the assumption that, in most cases, producer information acquisition and transfer costs will be lower than user information acquisition costs, one might favour a legal rule which would permit the establishment of a "due diligence" defence¹⁸⁶ which could be raised by the supplier to rebut a presumptive imposition of liability. This latter proposition, although it *might* be appealing,¹⁸⁷ would seem to be contradicted by the statutory language,¹⁸⁸ the regulatory framework,¹⁸⁹ and judicial decisions suggesting that the

¹⁸⁶ See *R. v. City of Sault Ste. Marie* (1978), 85 D.L.R. (3d) 161 at p. 181, 40 C.C.C. (2d) 353 at p. 373 (S.C.C.); *R. v. Trophic Canada Ltd.* (1981), 57 C.C.C. (2d) 1, [1981] 3 W.W.R. 158 (B.C.C.A.).

¹⁸⁷ It ignores the point that the increased litigation transaction costs created by the negligence standard or due diligence defence will almost certainly result in an externalization of some "consumer expectation costs", and consequently an over-production of "defective" products, a reduction in the incentive effects of damage allocation to the product supplier, and a reduction in loss spreading which would take place if catastrophic losses were allocated to producers even where the costs of accident prevention exceed the projected accident costs.

¹⁸⁸ In Ontario, for example, a specific "due diligence" defence is accorded to advertisers (Ont. Act, s. 4(9)) and liability in criminal proceedings is premised on knowledge of the inaccurate representation (Ont. Act, s. 17(2)); see *R. v. Kester* (1981), 121 D.L.R. (3d) 143, 58 C.C.C. (2d) 219 (Ont. H.C.J.). See also P.E.I. Act, ss. 5(9), 19(2). Similarly, the Newfoundland Act requires knowledge of the inaccuracy in the case of corporate officer liability, while the civil offence is premised on occurrence of the deceptive act. The British Columbia Act establishes both *quasi*-criminal sanctions under s. 25 and civil remedies under s. 22. Section 26 provides a "due diligence" defence for an accused subject to prosecution under s. 25, but, significantly, the Act does *not* provide defences with respect to the "civil" penalties under s. 22. Since the Legislature has explicitly provided defences relating to s. 25 of the Act, it is logical to assume that liability under s. 22 is absolute.

¹⁸⁹ The fact that the issue is one of civil rather than criminal liability, and that the civil remedy is discretionary, would seem to support a finding of absolute liability. See *R. v. City of Sault Ste. Marie*, *supra*, footnote 186; *R. v. Trophic Canada Ltd.*, *supra*, footnote 186; *A.-G. Ont. v. Hung* (1978), 90 D.L.R. (3d) 550, 21 O.R. (2d) 322 (Co.

commission of a deceptive act or practice (*i.e.*, the marketing of a product which does not conform to reasonable consumer expectations) involves absolute liability in most provinces.¹⁹⁰

The logical question, of course, is why after two years, has no litigation under trade practice legislation taken place? The answer, it seems, is that many of the issues which I have discussed have not yet been deliberated upon judicially. As well, an assessment of the medical and technical data describing the insulation, its performance characteristics and health risks is subject to constant reinterpretation and amendment as research into the product continues. These legal and technical uncertainties obviously discourage litigation. At the same time, the expense of litigation if borne by one plaintiff, either on his own behalf, or as a class representative, is likely to be substantial. Conversely, the value of a decision in the potential *defendants'* favour, in terms of reduced damage liability across large numbers of claims, suggests that a rational defendant should make a capital investment of extraordinary magnitude. While the capital investment in litigation is not necessarily predictive of success, the complexity and uncertainty of the scientific, technical and legal considerations suggest that a plaintiff will be faced with potential litigation costs which far exceed the present value of a future damage award discounted by the probability of failure. As well, and I must admit that my knowledge is impressionistic, the multi-party nature of the dispute has given rise to quite pervasive free-rider problems. All of this has been exacerbated by the fact that the loss is a "consumer loss", uninsured, and in many cases has necessitated substantial repair expenses. Finally, the prospects of federal government compensation have reduced the incentive to litigate to recover the uncompensated remainder, and introduced a delay factor into most litigation decisions.

(5) Economic Loss

The final issue to be discussed in the context of private rights

Ct.); compare *Mahoney v. Newfoundland Broadcasting Company Ltd.* (1981), 84 A.P.R. (2d) 68 at p. 78.

At the same time the imposition of absolute liability for omissions has been criticized by the British Columbia Court of Appeal in *R. v. Rohan's Rockpile Ltd. and Lowther* (1981), 57 C.C.C. (2d) 388 at p. 392, 26 B.C.L.R. 125 at p. 130.

¹⁹⁰ Alberta, it seems, requires that the supplier have knowledge of the defect in the case of product defect non-disclosure (Alta. Act. s. 4(c)(iii)), but at the same time would appear to impose absolute liability in the case of deceptive positive misrepresentations (Alta. Act, ss. 4(1)(d), 11(1)).

and urea formaldehyde insulation is the recoverability of economic losses by consumers. As suggested earlier, the majority of "injured" homeowners have suffered a loss only in so far as the market value of their homes has been reduced as a result of public perception of the risks associated with formaldehyde foam. A prospective buyer of the property will be less willing to pay an asking price for the good not only because he may perceive the risk of personal injury or property damage associated with the good and will therefore demand a reduction in price to reflect that risk, but also because he may perceive that future buyers may perceive that risk and may be less willing to buy the good. The decision will, in fact, be related to both considerations, and it would be impossible to extricate one from the other.

The use of the term "economic loss" in the cases has given rise to both confusion and unsophisticated analysis. The term may refer to the risk that the product will not be as valuable as that which is given (or paid) by the buyer, and to the associated risk that the product will not be as valuable as it was represented to be. These two risks, generally referred to as "direct" economic loss,¹⁹¹ may also be represented by the cost of replacement and repair.¹⁹² With limited exceptions,¹⁹³ this type of loss is not recoverable by a user of goods against a non-direct supplier.¹⁹⁴

¹⁹¹ See Note, "Economic Loss in Products Liability Jurisprudence", 66 Col. L. Rev. 917 (1966).

¹⁹² *Ibid.*, at p. 918. See also Waddams, *supra*, footnote 45 at p. 32; P. F. Cane, "Physical Loss, Economic Loss and Products Liability", 95 L. Q. Rev. 117 (1979), at p. 130.

¹⁹³ The cases which have allowed users to recover direct economic loss from non-direct suppliers have not generally analyzed the issues thoroughly, nor has consideration been given to doctrine or economic policy. See *Labrecque v. Saskatchewan Wheat Pool* (1977), 78 D.L.R. (3d) 289, [1977] 6 W.W.R. 122 (Sask. Q.B.), *var*d 110 D.L.R. (3d) 686, [1980] 3 W.W.R. 558 (Sask. C.A.) (recovery of lost profits from flax crop permitted against manufacturer who failed to warn of risks associated with certain manners of use). The case may be explained on the basis of recovery of consequential loss. The direct loss was the reduced value of the seed, while the consequential loss was the lost profits anticipated from the sale of the crop. See also *Fuller v. Ford Motor Co. of Canada Ltd.* (1978), 94 D.L.R. (3d) 127 at pp. 133-4, 22 O.R. (2d) 764 at pp. 770-1 (Co. Ct.) (recovery of direct economic loss in case of defective truck); *Western Processing & Cold Storage Ltd. v. Hamilton Construction Co. Ltd.* (1965), 51 D.L.R. (2d) 245, 51 W.W.R. 354 (Man. C.A.) (manufacturer of insulating material which did not function adequately held liable in tort to compensate non-direct users for costs of repairing plant).

¹⁹⁴ See *Rivtow Marine Ltd. v. Washington Iron Works* (1970), 74 W.W.R. 110 (B.C.S.C.),

Economic loss may also refer to consequential losses, which include all other losses, including lost revenue resulting from an inability to utilize the product in the expected manner.¹⁹⁵ Consequential economic losses, at least in the case of a failure to warn of product risks, as well as economic losses associated with personal injury and damage to property other than the product supplied, may be recoverable from the non-direct supplier.¹⁹⁶

It is not often recognized that both direct economic loss and consequential economic losses may be associated with a third kind of economic loss — *abstract* economic loss. The concept of direct economic loss refers to a reduction in market value or repair costs connected to a *particular* good which is defective either in the sense that it does not function adequately, or poses an unreasonable risk to health and safety. Abstract economic loss refers to a depreciation in market value of all products of a particular type. It is not linked to a specific defective product, but is a reflection of the market's perception that an entire product line poses a risk to health or safety or economic interests. This

at p. 119, affd 40 D.L.R. (3d) 530, [1974] S.C.R. 1189 (no recovery *per se* for negligent design in the absence of contract); *Thomas v. Whitehouse* (1979), 95 D.L.R. (3d) 762, 24 N.B.R. (2d) 485 (S.C. App. Div.). Where it is possible for the court to find a "direct" relationship (for example, in the case of negotiations in which negligent misrepresentations are made), the court may allow recovery for direct economic loss, represented by the cost of repair even though no privity of contract exists. See *Robert Simpson Co. Ltd. v. Foundation Co. of Canada Ltd.* (1982), 134 D.L.R. (3d) 459 at pp. 476-7, 36 O.R. (2d) 97 at pp. 113-14 (C.A.).

The point, of course, is that this "direct" relation is analogous to "contract" in the formal, legal sense of the word, and recovery of economic loss in this "direct" relation is awarded for the same reason it would have been awarded had a "contract" relation been held to exist.

¹⁹⁵ See Note, *supra*, footnote 191; Waddams, *supra*, footnote 45 at p. 35. For the purposes of this discussion, consequential economic loss will refer to any financial liability or expectation which is incurred or frustrated as a result of the supply of a product, but not direct economic loss. The range of possible consequential economic losses is infinite. See Waddams, *supra*, footnote 45.

The generally accepted view is that consequential loss is not recoverable in tort against non-direct suppliers. See *Rivtow Marine Ltd. v. Washington Iron Works*, *supra*, footnote 194; *S.C.M. (U.K.) Ltd. v. W.J. Whittall & Son Ltd.*, [1971] 1 Q.B. 337 (C.A.), at p. 344; *Ital-Canadian Investments Ltd. v. North Shore Plumbing & Heating Co. Ltd.*, [1978] 4 W.W.R. 289 (B.C.S.C.). But see *Maughan v. International Harvester Co. of Canada Ltd.* (1980), 112 D.L.R. (3d) 243, 38 N.S.R. (2d) 101 (S.C. App. Div.).

However, if the plaintiff's action is brought as negligent failure to warn, consequential economic losses may be recoverable. See *Rivtow Marine Ltd. v. Washington Iron Works*, *supra*, footnote 194 at p. 542 D.L.R., p. 1207 S.C.R.

¹⁹⁶ See *Rivtow Marine Ltd. v. Washington Iron Works*, *supra*, footnote 194; *Labrecque v. Saskatchewan Wheat Pool*, *supra*, footnote 193.

stigmatic effect occurs where it is not possible to distinguish between particular products which pose a greater risk to health, safety or economic interests from those which pose a lesser risk.¹⁹⁷ The phenomenon, which admittedly will be quite rare, requires that information about the risk be disseminated to a substantial segment of the market, *and* requires the existence of a product "defect" which does not, with existing technology, permit prospective buyers to distinguish dangerous from less dangerous products.

The courts have approached the recovery of economic loss through a number of doctrinal techniques. The courts may imply a contractual term that the product will be of merchantable quality or reasonably fit for its intended use. The implication of such terms, or one might say the imposition of such responsibility, is traditional in all direct relationship (contract) cases, except perhaps in the private sale of real estate,¹⁹⁸ and permits the recovery of economic losses in the absence of personal injury or property damage. The still predominant doctrine of privity of contract in Canada has precluded the application of the implied warranty doctrine to non-direct suppliers,¹⁹⁹ but even where this has been done in the United States, it is open to debate whether recovery of direct economic loss represented by the reduced value of the subject transferred, will be permitted.²⁰⁰ Another

¹⁹⁷ I have only been able to discover one case where abstract economic loss was discussed by the court, and the issue as to whether this loss should be recoverable was avoided. See *Two Rivers Company v. Curtis Breeding Service*, 624 F.2d 1242 (1980), at p. 1247.

¹⁹⁸ See *Scott-Polson v. Hope* (1958), 14 D.L.R. (2d) 333, 25 W.W.R. 427 (B.C.S.C.); *Alessio v. Jovica* (1973), 34 D.L.R. (3d) 107, [1973] 3 W.W.R. 432 (Alta. S.C. T.D.), rev'd in part 42 D.L.R. (3d) 242, [1974] 2 W.W.R. 126 (Alta. S.C. App. Div.) (no duty on a vendor to disclose expenditure necessary to obtain building permit); *Redican v. Nesbitt*, [1924] S.C.R. 135, [1924] 1 W.W.R. 305.

¹⁹⁹ See *Fraser-Bruce Maritimes Ltd. v. Central Mortgage and Housing Corp.* (1980), 117 D.L.R. (3d) 312, 42 N.S.R. (2d) 1 (S.C. App. Div.); *Greenwood Shopping Plaza Ltd. v. Beattie* (1980), 111 D.L.R. (3d) 257, [1980] 2 S.C.R. 228; *Sigurdson v. Hillcrest Service Ltd.* (1976), 73 D.L.R. (3d) 132, [1977] 1 W.W.R. 740 (Sask. Q.B.).

²⁰⁰ In *Seely v. White Motor Co.*, 403 P.2d 145 (1965), the California Supreme Court rejected the proposition suggested in *Santor v. A. and M. Kasaghuesian, Inc.*, 207 A.2d 305 (1965), that economic losses for defective quality and performance could be recovered in a strict products liability action against a non-direct supplier.

The *Seely* decision has been adopted in the vast majority of American jurisdictions: see *Nobility Homes of Texas, Inc. v. Shivers*, 557 S.W.2d 77 (1977), at p. 79; *Fredonica Broadcasting Corp. v. R.C.A. Corp.*, 481 F.2d 781 (1973); *Avenell v. Westinghouse Corp.*, 324 N.E.2d 583 (1974); *Mercer v. Long Mfg. N.C., Inc.*, 665 F.2d 61 (1982).

Where the privity doctrine has been abolished under the Uniform Commercial

technique permitting recovery of economic loss has been to impose liability for negligent misrepresentation of performance, quality, or "value" characteristics.²⁰¹ Again, however, the liability of a supplier of a "good" which was not as valuable as the user expected, is likely premised on a direct relationship with the user.

At the same time, the courts have disallowed recovery of direct economic loss in negligence against non-direct suppliers, at least in the case of product failure due to negligent design or manufacture.²⁰² The non-recovery of economic loss has been variously framed in terms of causation,²⁰³ duty²⁰⁴ and foreseeability or remoteness.²⁰⁵ Whatever the doctrinal tool, it is clear that the issue of recovery of economic loss in products liability cases is a question of policy.²⁰⁶ The one possible exception to the general

Code, the majority of jurisdictions still require that a buyer demonstrate a direct relationship with the defendant in order to recover economic loss represented by the reduced value of the object. See *Davis v. Homasote Company*, 574 P.2d 1116 (1978); *State v. Cambell*, 442 P.2d 215 (1968); *Flory v. Silvercrest Industries, Inc.*, 633 P.2d 383 (1981); *Richards v. Goerg Boat & Motors, Inc.*, 384 N.E.2d 1084 (1979).

Even where economic loss has been recovered, it has been extended only where the particular product purchased is defective in the sense that it does not function adequately. See *Santor v. A. and M. Kargheusian, Inc.*, *ibid.*; *Nobility Homes of Texas, Inc. v. Shivers*, *ibid.*, at p. 81; *Western Equipment Co. v. Sheridan Iron Works*, 605 P.2d 806 (1980); *Morrow v. New Moon Homes, Inc.*, 548 P.2d 279 (1976).

²⁰¹ See e.g., *Herrington v. Kenco Mortgage & Investments Ltd.* (1981), 125 D.L.R. (3d) 377, 29 B.C.L.R. 54 (S.C.) (negligent misrepresentation of value of property secured by mortgage influencing decisions of purchaser of mortgage from mortgage broker); *McBean v. Bank of Nova Scotia* (1981), 15 B.L.R. 296 (Ont. C.A.) (negligent advice of bank as to economic risks of investment decision); *L. Shaddock & Associates Pty. Ltd. v. Parramatta City Council* (1982), 55 A.L.J.R. 713.

²⁰² See *Rivtow Marine Ltd. v. Washington Iron Works*, *supra*, footnote 194; *Ital-Canadian Investments Ltd. v. North Shore Plumbing & Heating Co. Ltd.*, *supra*, footnote 195 at pp. 291-2; *A.-G. Ont. v. Fatehi* (1981), 127 D.L.R. (3d) 603 at p. 614, 18 C.C.L.T. 97 at p. 114 (Ont. C.A.). But see *Maughan v. International Harvester Co. of Canada*, *supra*, footnote 195.

²⁰³ *MacMillan Bloedel Ltd. v. Foundation Company of Canada Ltd.* (1977), 75 D.L.R. (3d) 294, [1977] 2 W.W.R. 717 (B.C.S.C.); or perhaps "directness". See Harvey, 37 Mod. L. Rev. 320 (1974), at pp. 323-4; *Gypsum Carrier Inc. v. The Queen* (1977), 78 D.L.R. (3d) 175 at pp. 194-8, [1978] 1 F.C. 147 at pp. 171-6 (T.D.).

²⁰⁴ See *Bethlehem Steel Corp. v. St. Lawrence Seaway Authority* (1977), 79 D.L.R. (3d) 522, [1978] 1 F.C. 464 (T.D.); *Spartan Steel & Alloys Ltd. v. Martin & Co. (Contractors) Ltd.*, [1973] 1 Q.B. 27, [1973] 3 All E.R. 557 (C.A.).

²⁰⁵ See *Yumerovski v. Dani* (1977), 83 D.L.R. (3d) 558, 18 O.R. (2d) 704 (Co. Ct.); *Spartan Steel & Alloys Ltd. v. Martin & Co. (Contractors) Ltd.*, *supra*, footnote 204 at pp. 36-7 Q.B., p. 562 All E.R.; *Weiner v. Zoratti* (1970), 11 D.L.R. (3d) 598; 72 W.W.R. 299 (Man. Q.B.); *Gypsum Carrier Inc. v. The Queen*, *supra*, footnote 203 at pp. 187-94 D.L.R., pp. 162-71 F.C.; *Trappa Holdings Ltd. v. District of Surrey* (1978), 95 D.L.R. (3d) 107, [1978] 6 W.W.R. 546 (B.C.S.C.).

²⁰⁶ See *Spartan Steel & Alloys Ltd. v. Martin & Co. (Contractors) Ltd.*, *supra*, footnote

rule that direct economic losses will not be recoverable against non-direct suppliers is the cost of repair necessitated by the risk of personal injury or property damage which has not yet manifested itself.²⁰⁷ This direct economic loss, and of course the costs of personal injury and property damage claims which are shifted from the injured party to an intermediate supplier,²⁰⁸ may be recoverable against a non-direct supplier. In the former case, it is possible to argue that the reduction in market value of the product may be recoverable.²⁰⁹

In general, however, legal rules requiring disclosure of economic risks by non-direct suppliers, or put another way, legal rules permitting the recovery of economic losses by non-direct buyers have not been adopted by the courts. The cases suggest that recovery of this loss will not be permitted, the doctrinal rationale being that the protection of the buyer's expectation of the value of the object which he is purchasing is a matter of contract law, and not of tort.²¹⁰ The question, of course, is why should this economic loss be considered legally relevant only

204; *A.-G. Ont. v. Fatehi*, *supra*, footnote 202 at pp. 622-3 D.L.R., pp. 124-5 C.C.L.T.; P. S. Atiyah, "Negligence and Economic Loss", 83 L.Q.R. 248 (1967); C. Harvey, "Economic Losses and Negligence", 50 Can. Bar Rev. 580 (1972); P. P. Craig "Negligent Misstatement, Negligent Acts and Economic Loss", 92 L. Q. Rev. 213 (1976), at pp. 235-41; R. Hayes, "The Duty of Care and Liability for Purely Economic Loss", 12 Mel. U. L. Rev. 79 (1979), at pp. 89-97.

²⁰⁷ See *Batty v. Metropolitan Property Realizations Ltd.*, [1978] 2 All E.R. 445 (C.A.); *Thompson v. Plainsman Developments Ltd.* (1981), 19 R.P.R. 226 (B.C. Co. Ct.), at pp. 247-8; *Rivtow Marine Ltd. v. Washington Iron Works*, *supra*, footnote 194 at pp. 548-50 D.L.R., pp. 1216-19 S.C.R. *per* Laskin J. (dissenting); *Ordog v. District of Mission* (1980), 110 D.L.R. (3d) 718 at p. 724, 31 B.C.L.R. 371 at p. 378 (S.C.); *Bowen v. Paramount Builders (Hamilton) Ltd.*, [1977] 1 N.Z.L.R. 394; *Anns v. Merton London Borough Council*, [1978] A.C. 728 (H.L.), at p. 759 *per* Lord Wilberforce. See generally P. F. Cane, *supra*, footnote 192. But see *A.-G. Ont. v. Fatehi*, *supra*, footnote 202 at pp. 614-16 D.L.R. *per* Wilson J.A. and pp. 620-1 D.L.R. *per* Thorson J.A., pp. 114-17 C.C.L.T. *per* Wilson J.A. and pp. 122-3 C.C.L.T. *per* Thorson J.A.

²⁰⁸ See *Lambert v. Lewis*, [1980] 2 W.L.R. 299 (C.A.), *affd* on other grounds [1981] 1 All E.R. 1185 (H.L.), at p. 1192.

²⁰⁹ See *Batty v. Metropolitan Property Realizations Ltd.*, *supra*, footnote 207.

²¹⁰ This distinction, that performance risks are properly the subject of recovery in contract, while risks to person and property are properly the subject of tort, has often been stated as a dogmatic conclusion justifying non-recovery. See *Nielsen v. City of Kamloops* (1981), 129 D.L.R. (3d) 111 at p. 121, 31 B.C.L.R. 311 at p. 321 (C.A.) (liability for a shoddy product must be founded on basis of contractual relations); Cane, *supra*, footnote 192 at pp. 138-40; see also J. C. Shepherd and R. A. Mueller, "The Recovery of Economic Losses on a Product Liability Lawsuit", in *Product Liability of Manufacturers Prevention and Defence* 1979, Practising Law Institute (1979), p. 707.

between direct suppliers and users of products? The answer may be that the allocation of direct economic loss to manufacturers, and the imposition of responsibility on manufacturers to disclose economic risks whether under the guise of a duty to warn, or by permitting recovery of economic loss under a non-privity implied warranty doctrine, may cause more problems than it solves.

In the first place, one must keep in mind that information acquisition and transfer is not costless, and that the value of most, if not all, information regarding product quality will vary with the individual preferences of the prospective recipient. In the case of product performance or quality characteristics, the information will be available in many cases, albeit in a post-transactional context, through use of the product. The transaction costs of information acquisition through product use are virtually non-existent, and there are clearly no transfer costs. Where the magnitude of the economic loss is not likely to be substantial (which will be the case where one is concerned only with reduction in product value as a result of non-disclosure of performance characteristics which do not accord with the consumers' reasonable expectations), the costs of information acquisition and transfer by the non-direct supplier when assessed against the prospective benefits, and when compared to the consumer's own information-gathering abilities through experience with the product, may not be justified. Generally, in the case of information regarding product quality involving repetitive transactions, which can be evaluated on a comparative basis, and in respect of which the cost of errors are apt to be relatively low in magnitude, the benefits of pre-purchase product performance information may not exceed the costs of transfer.²¹¹

²¹¹ At the same time, where the product is characterized by rapid technological change, or where the purchase is of a "one-time" venture, the experience generated information may be useless. See A. Leff, "Injury, Ignorance and Spite — The Dynamics of Coercive Collection", 80 Yale L.J. 1 (1970), at p. 40. In that case, pre-purchase information may be called for.

In addition, critical economic information may not be discoverable where the consumer has decided to pay for performance characteristics which are, at least to him, not worth the price. The injury in this case is not the failure of the good to perform in accordance with the consumers expectation, which would normally be detectable through use. Rather, the injury is the excess expenditure for a good which performs at a level which exceeds the consumer's needs. If the user is unaware of the potential performance through pre-transaction performance information, he is unlikely to discover through use that he has been injured by paying for what he does not need. See R. Pitofsky, "New Programs for Advertising Regulation" in D. Tuerck, *Issues in Advertising* (1978), p. 37.

Thus the perplexing analysis of economic loss in the products liability cases can perhaps be better understood if we look at liability for economic loss as simply the consequence of a failure to provide accurate information about the economic value of a product, or a failure to warn of economic risks associated with the product's use or ownership. This analysis forces us to identify the nature of the economic risks, or economic data, which we consider appropriate for disclosure. The focus of the inquiry is on the misperception of value by the user, and it is difficult to decide whether a manufacturer should be obliged to disclose economic information relating, for example, to the particular uses to which a buyer may be able to put the good, to alternative sources of supply of the good, to the buyer's taste for the good, to the buyer's ability to use the good for a longer or shorter period of time, to the buyer's concern with long-term service facilities, and a variety of variables influencing the buyer's valuation and willingness to pay for the good, including the direct supplier's representations, the price asked, and information generated after the manufacturer distributed the good.²¹²

A related reason for a decision to exempt non-direct suppliers from an obligation to disclose economic risks is that the information is not usually quantifiable, thus reducing the extent to which consumers will be able to use the information in drawing comparisons between products. In addition, in many cases quality information or, put another way, information about economic risks will not be uni-dimensional, unlike information about safety which while not perfectly quantifiable, *is* uni-dimensional. Most, if not all, consumers will view a higher degree of safety as better than a low degree. Admittedly, the valuation of safety may differ with the degree of risk aversion exhibited by the individual, but it seems likely that the valuation will be in the same direction.²¹³

²¹² That is not to say that "economic information" is not valuable, and indeed may be subject to mandatory disclosure rules. Thus the Federal Trade Commission has required disclosure of the employment opportunities of vocational school graduates, comparative gasoline octane ratings, light bulb durability and electrical appliance energy efficiency. See Pitofsky, *supra*, footnote 211.

²¹³ How, for example, is one to quantify the value represented by the geographical origin of the goods which may reflect political preferences, ethnocentrism, or the financial stability and reputation of the seller. The latter aspect of the value of goods may itself

Another obvious difficulty with permitting a user to sue a non-direct supplier for direct economic loss is the inability, in many cases, for the latter to control the expectations of the user which may be created or influenced by the price charged for the good, salesmen's representations, direct supplier advertising and the terms of the contract to supply the goods. The degree of responsibility of the manufacturer for user expectations of value is difficult, if not impossible, to identify with precision.²¹⁴

Moreover, the imposition of liability on non-direct suppliers for defective quality in consumer goods may have the same impact on consumer choice as has been hypothesized to be the case where liability for safety defects is allocated to the non-direct supplier. In the latter case it has been argued that consumer choice of goods of varying degrees of safety is reduced,²¹⁵ leaving low risk-averse consumers to subsidize high risk-averse consumers when all are forced to purchase goods exhibiting a standard level of safety. In the case of risks to personal health and safety, this standardization of safety, subsidization of high risk consumers, and reduction of choice may be acceptable on the ground that the *apparent* differences in desire for safety, or perhaps the apparent differences in desire to engage in risk-taking activities, are as much related to initial wealth distribution, and knowledge of, and ability to process information about risk as it is to anything else.²¹⁶ While we may be willing to forego choice and permit subsidization in the case of safety for these reasons, the arguments are not so nearly persuasive in the case of the economic value of consumer goods relating to their performance.

An additional point in favour of non-liability for economic losses is that while it may force internalization of social costs, and

reflect the ability and willingness of the seller to remedy defects, and the quality of the product purchased and resold by the retailer where "major" retailers may be able to influence the quality of goods supplied to them. See Jentz, "Federal Regulation of Advertising", Am. Bus. L.J. 409 (1968); D. Swann, *Competition and Consumer Protection* (1979), p. 174.

²¹⁴ See Waddams, *supra*, footnote 45 at p. 33, Cane, *supra*, footnote 192 at pp. 138-9.

²¹⁵ See W. Oi, "The Economics of Product Safety", 4 Bell J. of Econ. 3 (1973); J. A. Ordover, "Products Liability in Markets with Heterogeneous Consumers", 8 J. of Leg. Stud. 505 (1979), at pp. 506-7.

²¹⁶ This may explain intuitive statements holding that physical interests are somehow "intrinsically more worthy of protection" than economic ones. See Cane, *supra*, footnote 192 at pp. 129, 134, 138.

provide incentives to provide "better" products, it simultaneously *reduces* the incentives of both consumers and other participants in the distributive process to take measures to reduce the risk of accidents, or the consequences of accidents which do occur.²¹⁷ In the case of risks of personal injury and property damage, this consequence may not be significant if one assumes first, that direct suppliers can do little to reduce the potential injuries and property damage resulting from the use of defective products, and second, that most consumers will not be indifferent between their personal safety and monetary compensation in damages.²¹⁸ In the case of economic risks relating to product value, the obvious response is that the seller *can* reduce the risk by negotiating its allocation, by modification of the price, or through modification of the product description. In all of these cases, the risk is voluntarily assumed by the consumer buyer, at a price, and thus the "accident" which might otherwise occur does not.²¹⁹ This reduction in economic injury not only can be achieved by the direct supplier and consumer through product choice and contract negotiation; it seems that we might very well think it desirable.

It is through this mechanism that we permit consumer choice among goods of infinite degrees and kinds of value associated with infinite economic variables, depending upon taste, degree of risk aversion, and willingness to pay. The point is that allocation of responsibility for economic risks to the manufacturer, by reducing direct supplier incentives to reduce economic accidents, may reduce choice, perhaps oblige low-risk consumers to subsidize high-risk consumers, and give rise to more frequent accidents.

The argument can also be made that direct economic loss can never exceed the market value of the property.²²⁰ The magnitude of this loss will, in most product liability cases, normally be assessed at a fraction of the capital value of the good. Likewise,

²¹⁷ See Oi, *supra*, footnote 215; Epstein, *supra*, footnote 40 at pp. 41, 42.

²¹⁸ See Epstein, *supra*, footnote 40 at pp. 42, 43; Guss, *supra*, footnote 74 at p. 168.

²¹⁹ See Guss, *supra*, footnote 74 at p. 159.

²²⁰ Unless cost of repairs are permitted where the appreciation in market value concomitant to the repairs is exceeded by the repair expenses. This may occur, but at best it will be an infrequent occurrence, and when it does occur the court may very well limit recovery to the depreciation in market value. See D. Harris, A. Ogus and J. Phillips, "Contract Remedies and the Consumer Surplus", 95 L. Q. Rev. 581 (1979), at pp. 589-94.

the transaction costs necessary to shift this loss to the manufacturer, both in terms of the number of plaintiffs and difficulties of proof of loss, may not justify establishing legal rules which would permit the loss redistribution to take place.²²¹

The limitation on recovery of direct economic loss from manufacturers may reflect the difficulty in determining the degree of responsibility which the non-direct supplier bears for the market depreciation associated with both direct and abstract loss. The reduction in the willingness of prospective buyers to pay a certain price for the good may relate to an infinite range of factors, including the cost of credit, increased supply of this good or substitute goods, and changes in taste. In the case of direct economic loss, the risks of error in attempting to differentiate the defect devaluation from the extrinsic variables affecting market value are reduced to a degree by comparing the price obtainable for the defective good with that for non-defective goods. Where, however, the entire product line is devalued, as in the case of abstract economic loss, the risks of error in determining the relationship between the presence of the defect and the market devaluation may be quite significant. The product line must be evaluated against alternate goods, and there is a significant possibility that the difference in value may be related to some attribute or attributes other than the risk of the safety defect.

A further explanation for a decision to deny recovery of direct economic loss may reflect the fact that the value of a product, especially a consumer product, is not measured simply by the price at which the consumer could sell the good. To some degree at least, a consumer with a valueless consumer good may be better off than he would have been without the good to the extent that the product is functioning adequately. The risk of over-compensation is exacerbated in the case of abstract economic loss where we assume that the product is functioning perfectly. Accordingly, the court, if it were to award the direct or abstract economic loss in its entirety, would have to ignore the use aspect²²² of the consumer's contractual expectation and benefit. Alternatively, an award of direct or abstract economic loss would involve the investment of additional judicial resources to

²²¹ See D. N. Dewers, J. R. S. Prichard and M. J. Trebilcock, "Class Actions as a Regulatory Instrument", Ontario Economic Council, Discussion Paper (1980).

²²² See Bonbright, *Valuation of Property*, Vol. I (1937), p. 315.

determine the value to be allocated to this use aspect, which would vary with each consumer, and which then could be deducted from the economic damage award. This risk of over-compensation, and in some cases under-compensation, especially in the case of abstract economic loss, as well as the costs of assessment, may influence the court to deny recovery entirely.

An additional reason why recovery of abstract economic loss, and perhaps direct economic loss, is avoided by the courts in the case of non-direct suppliers is the concern that the market devaluation, which is not only directed at a particular good (*i.e.*, a direct economic loss) but is directed at a non-direct supplier's product line, will often vary with the publicity and drama surrounding the triggering event.²²³ The consumer's perception of "hazardousness" will reflect not simply the probability of the risk materializing, but will reflect the immediacy and notoriety of the product ban or perhaps judicial declarations of design negligence. This distortion of risk may be exacerbated by the apparent real estate industry practice of requiring specific disclosure of the presence or prior existence of foam insulation in the home. In such cases, it is quite possible that this specific disclosure may increase the market's emphasis on the formaldehyde risk at the expense of more salient information.²²⁴ The market value depreciation may simply reflect a transient, self-remedying aberration in consumer taste. The reluctance to award this loss, especially where it is unrelated to a specific product defect which has manifested itself, recognizes that perception of risk will vary with time, and may very well degrade as the drama of the event fades.²²⁵

²²³ B. Fischhoff, "Cognitive Liabilities and Product Liability", (1977) 1 J. of Prod. Liab. 207 at pp. 208-9. The over-perception of risk may be due to the "bias of availability" which may distort perceived probabilities on the basis of the ease with which one can imagine similar past events. See A. Tversky and D. Kahneman, "Judgment under Uncertainty: Heuristics and Biases", 185 Science 1124 (1974). This phenomenon may explain the dramatic difference, at least at one point in time, between market losses in several American states and Canada. See Consumer Product Safety Commission, *supra*, footnote 6 at 14400.

²²⁴ See Beales, Craswell and Salop, *supra*, footnote 178 at pp. 524-5.

²²⁵ In fact, it may be argued that the perception of risk may degrade to a degree where consumer behavior reflects a consistent underestimation of risk, due to an apparent psychological bias towards the de-emphasis of negative events through selective retention. See P. Nemetz, *et al.*, *Regulation of Toxic Chemicals in the Environment*, Working Paper No. 20, Regulation Reference, Economic Council of Canada (1981), at p. 50; P. Vertinsky, "The Use of Mass Communication Strategies to Promote Life-Style Change: The Case of Energy Conservation in Canada", in P. Nemetz, ed., *Energy Policy, The Global Challenge* (1981), pp. 383-420.

Possibly the strongest argument against recovery of abstract direct economic loss involves an analysis of the loss-spreading consequences of recovery. In the normal course of events, a function of tort law will be to distribute catastrophic economic losses from one injured user to large numbers of the public whether through producer third party insurance, self-insurance, or allocation of the loss to shareholders and employees.²²⁶ In the case of abstract direct economic loss, the injury will only rarely be catastrophic, and because products liability insurance will only rarely, if ever, be available to spread the loss,²²⁷ the non-direct supplier will in many cases simply redistribute the loss to another set of product users. Thus it is entirely possible that permitting recovery of abstract economic loss will simply involve loss shifting from one widely spread class of users to another. It may be difficult to justify the transaction costs necessarily incurred in such a case if this "boomerang" loss redistribution activity is the expected result.

The foam insulation cases, and perhaps they are unique, involve economic losses which are clearly abstract, but at the same time are clearly consequential in nature. This abstract *consequential* economic loss, arises from a product (insulation) which is inextricably combined with another product (the residential home) in such a way that the relatively insignificant abstract direct economic loss (represented by the reduction in market value of insulation) has been transformed into a substantial abstract consequential economic loss (represented by the reduction in market value of the home).²²⁸ In addition, the

²²⁶ In commercial transactions the argument can be made that the economic risks associated with product quality may be spread at a lower cost by the product user rather than through third party insurance by the product supplier. See P. S. Atiyah, *Accidents, Compensation and the Law*, 3rd ed. (London, Werdenfeld & Nicolson, 1980) p. 90. Whatever the truth of this thesis in the case of defective quality, it seems that provision of third party insurance in the case of abstract economic loss in the case of design defects is not the ordinary case. See Waddams, *supra*, footnote 45 at pp. 217-19.

²²⁷ Waddams, *supra*, footnote 45 at pp. 38-9.

²²⁸ The classification of the loss as abstract *consequential* economic loss explains, I think, the paucity of cases in which this issue has been discussed. See *supra*, footnote 197. In the normal course of events, the abstract *direct* economic loss will be insubstantial, limited to the expected capital value of the good, and in many cases the loss will be a small fraction of the capital value. The relative insignificance of the loss, especially where the good is functioning adequately, coupled with the "expectation" nature of the injury will not usually create the necessary incentive to litigate.

devaluation of the home is perhaps related to perceived risks to safety and property. I say "perhaps", because in many cases the willingness of prospective buyers to pay may be influenced, to a greater or lesser degree, not by a subjective perception of risk to safety, but also by a concern with the capital value of his investment due to others' perception and valuation of safety risks (and of others' perceptions of economic risks). The point is that, in the foam insulation case, the economic risks and risks to personal safety have become impossible to extricate from one another.²²⁹ If we premise liability for direct economic losses on the apparent qualitative difference between risks to personal safety or health and risks to product value, and allow recovery of economic losses in the former case only,²³⁰ it becomes exceedingly difficult to decide into which category we place a product which reflects substantial elements of both.

Finally, it is not clear whether the abstract economic loss is due to our technological inability to distinguish safe from dangerous houses, or to a widespread public reluctance to rely on existing technology which *is* able to discriminate between the defective and non-defective products. At the same time, it is quite possible that *all* homes are defective in that all pose a risk to health or safety, and that the distinction to be drawn among homes is simply the degree, nature and perhaps timing of the risk.

If that is so, then to insist that this market loss should not be recoverable, on the grounds that no real danger exists, in effect, ignores the valuation of the risk by the market. The aggregate economic loss, reflected in devaluation of property values, represents the price which the public is demanding in return for

²²⁹ A similar phenomenon is apparent in the case of "ineffective" drugs. The drug does not pose a risk to health or safety in the sense that it "causes" injury, and thus can be viewed as an economic risk. At the same time, the user may, in choosing an ineffective drug, fail to use an effective good and thus expose himself to a risk to personal safety or health. The ineffective drug case is analogous to the UFFI case. The risk, which is reflected in devaluation, is related to both safety and economic variables.

²³⁰ Even where recovery of direct economic loss has been held to be recoverable against a non-direct supplier, the recovery has been premised on a demonstration that this *particular* product does not function in accordance with the user's expectations, or has caused physical injury or property damage. See *supra*, footnote 200; W. Kimble and R. O. Leshner, *Products Liability* (1979), pp. 147-50; *Crocker v. Winthrop Laboratories*, 514 S.W.2d 429 (1974); *Fuller v. Ford Motor Co. of Canada Ltd.* (1978), 94 D.L.R. (3d) 127, 22 O.R. (2d) 764 (Co. Ct.); *Bowen v. Paramount Builders (Hamilton) Ltd.*, [1977] 1 N.Z.L.R. 394; *Mount Albert Borough Council v. Johnson*, [1979] 2 N.Z.L.R. 234.

exposure to the hazard. One can state, as I have done, that the court should reassess market behaviour, and one can argue that this perceived loss in welfare results from the distorted and inflated value which members of the public place on their lives. None the less, the loss reflected in the market devaluation of the homes, in light of perceived risks to personal health and safety, is real, and to ignore it is to insulate the product supplier from this element of social cost.

(To be continued)