Product Defects Causing Commercial Loss: The Ascendancy of Contract over Tort

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I. INTRODUCTION

Cayuga Harvester, a large-scale farmer, purchased a harvesting machine from Allis-Chalmers.1 The machine malfunctioned and Cayuga was unable to harvest its crop.2 When Cayuga sued for

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2. Id. at 7, 465 N.Y.S.2d at 609.
breach of warranty, seeking $10 million for its lost crop, Allis-Chalmers relied on a contractual provision that excluded recovery of consequential damages of this kind.\(^3\) The court observed that allowance of Cayuga's claim could result in a recovery many times the purchase price of the machine and that "[i]t defies reason to suppose that [Allis-Chalmers] could have intended to assume such risks."\(^4\) The court sustained the contractual limitation on liability even though it was shown that Cayuga had no choice in the matter; all farm machinery manufacturers insisted on contractual provisions excluding consequential damages.\(^5\)

Cayuga also sought recovery in negligence and in strict product liability.\(^6\) These claims were rejected on the ground that the wasting or spoilage of crops was mere "economic loss" not subject to recovery in tort.\(^7\) Yet, it is clear that if Cayuga's harvester had exploded, rather than broken down, and if Cayuga's crops had been consumed by an ensuing fire, rather than left to rot in the fields, a claim could have been asserted in product liability (if the machine had been defective) and in negligence (if the machine had been carelessly made).\(^8\) Any effort to limit such a tort claim by a contractual stipulation would have encountered hostility in the courts.\(^9\)

Why should these two types of claims be subject to different analyses? The losses to Cayuga are the same in both instances: one inoperable harvester and one lost crop. Moreover, in Cayuga's case, there was a contract between the parties that explicitly allocated risk and placed the burden of these losses on Cayuga. This contractual stipulation referred to both contract and tort.\(^10\)

Section II of this Article briefly examines the warranties provided in the Uniform Commercial Code and the extent to which such warranties may be limited by contract. Section III analyzes the tort actions that are available to commercial buyers who purchase defective products directly from manufacturers. Section IV considers whether it is socially desirable to permit contracting parties to allocate risks despite inequality in the bargaining power of the parties and possible ignorance of the buyer or seller with respect to the nature and

\(^3\) Id.
\(^4\) Id. at 14, 465 N.Y.S.2d at 613.
\(^5\) Id. at 21, 465 N.Y.S.2d at 617.
\(^6\) Id. at 8, 465 N.Y.S.2d 610.
\(^7\) Id. at 25-27, 465 N.Y.S.2d at 620-21. The court held, however, that consequential damages could be recovered if fraud were proved. Id. at 23-25, 465 N.Y.S.2d at 618-19.
\(^8\) See infra notes 96-118.
\(^9\) See infra notes 144-51.
\(^10\) Cayuga Harvester, 95 A.D.2d at 13, 465 N.Y.S.2d at 611.
magnitude of the risks involved. Section V examines warranty and tort claims in cases in which the buyer of the product does not deal directly with the seller, but obtains the defective product from an intermediary. Section VI discusses personal injury claims that emerge in a commercial context and considers the extent to which they can be accommodated within the general structure of risk allocation discussed in this Article. In Section VII, this Article concludes by proposing that, in cases of commercial loss (not involving personal injury or property damage to ordinary consumers), the law of product liability should be confined to claims in contract.

II. THE UCC AND THE REGIME OF CONTRACT

A. Standards of Liability

Under the Uniform Commercial Code (UCC), an aggrieved buyer may sue for breach of express or implied warranty. An express warranty is any "affirmation of fact or promise made by the seller to the buyer which relates to the goods and becomes part of the basis of the bargain." Moreover, any "description of the goods which is made part of the basis of the bargain creates an express warranty that the goods shall conform to the description." The statements may appear in advertisements, labels, or brochures, as well as in the contract itself, and they may encompass representations made during negotiations. However, "an affirmation merely of the value of the goods or a statement purporting to be merely the seller's opinion or commendation of the goods does not create a warranty." There are two implied warranties. A "warranty that the goods shall be merchantable is implied . . . if the seller is a merchant with respect to goods of that kind." To be merchantable, goods must be "fit for the ordinary purposes for which such goods are used."

12. Id. § 2-313(1)(b). In addition, any "sample or model which is made part of the basis of the bargain creates an express warranty that the whole of the goods shall conform to the sample or model." Id. § 2-313(1)(c).
14. The parol evidence rule, however, may exclude prior and contemporaneous representations. See U.C.C. § 2-202. Absent such a bar, such representations can constitute express warranties. See Transamerica Oil, 723 F.2d at 762.
15. U.C.C. § 2-313(2).
16. Id. § 2-314(1).
17. Id. § 2-314(2)(c). In addition, goods must be at least such as:
ther, where the seller "has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is . . . an implied warranty that the goods shall be fit for such purpose." 18

In the event of breach of warranty, the buyer may reject the goods. 19 With respect to accepted goods, the buyer may be able to revoke acceptance in some cases and seek a refund of the purchase price. 20 The more general measure of damages is the difference "between the value of the goods accepted and the value they would have had if they had been as warranted, unless special circumstances show proximate damages of a different amount." 21

In a proper case, the buyer may also recover incidental and consequential damages. 22 Incidental damages include "any commercially reasonable charges, expenses or commissions in connection with obtaining substitute goods and any other reasonable expense incident to the delay or other breach." 23 Consequential damages include: "(a) any loss resulting from general or particular requirements and needs of which the seller at the time of contracting had reason to know and which could not reasonably be prevented . . . ; and (b) injury to person or property proximately resulting from any breach of warranty." 24

The UCC provides comprehensive protection:

1. A breach of warranty may result in product failure so complete as to render the product worthless, or the breach may cause an accident that results in the destruction of the product. In either case, the proper measure of damages is the cost of replacement ("the value

(a) pass without objection in the trade under the contract description; and
(b) in the case of fungible goods, are of fair average quality within the description; and
(d) run, within the variations permitted by the agreement, of even kind, quality and quantity within each unit and among all units involved; and
(e) are adequately contained, packaged, and labeled as the agreement may require; and
(f) conform to the promise or affirmations of fact made on the container or label if any.
Id. § 2-314(2). Other implied warranties "may arise from course of dealing or usage of trade."
Id. § 2-314(3).
18. Id. § 2-315.
19. Id. § 2-601. The seller, however, has a limited opportunity to cure a deficiency. See id. § 2-508.
20. Id. § 2-608.
21. Id. § 2-714(2).
22. Id. § 2-714(3).
23. Id. § 2-715(1).
24. Id. § 2-715(2).
the goods would have had if they had been as warranted"). If the product can be rehabilitated after either a breakdown or accident, the proper measure of damages is the cost of repair (a good proxy for the diminution in value caused by the product’s deficiency).

2. Physical damage to other tangible property, such as damage to work-in-progress or damage to adjacent equipment, can be recovered as "injury to . . . property proximately resulting from [the] breach of warranty." Recovery can be had without regard to whether the damage is inflicted by product failure or by an accident triggered by the product’s deficiency.

3. Lost profits and other economic losses can be recovered as long as the seller had knowledge or reason to know of the "general or particular requirements and needs" of the buyer. Again, recovery is available whether these losses ensue from product failure or product mishap.

B. Contractual Limitations on Liability

Warranties may be excluded or modified, and remedies may be limited, by agreement of the parties. As to express warranties, "[w]ords or conduct relevant to the creation of an express warranty and words or conduct tending to negate or limit warranty shall be construed wherever reasonable as consistent with each other; but . . . negation or limitation is inoperative to the extent that such construction is unreasonable." In short, a contract cannot both create and disclaim an express warranty.

With respect to implied warranties, an exclusion or limitation of the warranty of merchantability "must mention merchantability and in case of a writing must be conspicuous"; to exclude any implied warranty of fitness, "the exclusion must be by a writing and conspicuous." All implied warranties are excluded by "expressions like 'as

25. Id. § 2-714(2).
26. Id. § 2-714(2); 1 J. White & R. Summers, Uniform Commercial Code 504 (practitioners ed., 3d ed. 1988). The buyer should also recover for any impairment of value remaining after repairs have been completed. Id.
27. U.C.C. § 715(2); see 1 J. White & R. Summers, supra note 26, at 524.
28. U.C.C. § 715(2); see, e.g., Central Bit Supply, Inc. v. Waldrop Drilling & Pump, Inc., 102 Nev. 139, 717 P.2d 35 (1986) (purely economic loss may be recovered under breach of warranty theory); see also 1 J. White & R. Summers, supra note 26, at 518-19. The recovery of consequential damages is limited by foreseeability, although this limit has not proved to be a significant impediment in any of the cases examined in this Article.
29. U.C.C. § 2-316(1).
30. Id. § 2-316(2). Further: "Language to exclude all implied warranties of fitness is sufficient if it states, for example, that 'There are no warranties which extend beyond the description on the face hereof.'" Id.
is, 'with all faults,' or other language which in common understanding calls the buyer's attention to the exclusion of warranties and makes plain that there is no implied warranty."

On remedies, the UCC provides that damages for breach of warranty "may be liquidated in the agreement but only at an amount which is reasonable in the light of the anticipated or actual harm caused by the breach, the difficulties of proof of loss, and the inconvenience or nonfeasibility of otherwise obtaining an adequate remedy." More generally:

[T]he agreement may provide for remedies in addition to or in substitution for those provided in [Article 2 of the UCC] and may limit or alter the measure of damages recoverable under [Article 2], as by limiting the buyer's remedies to return of the goods and repayment of the price or to repair and replacement of non-conforming goods or parts.

There are, however, three limitations: (1) resort "to a remedy as provided is optional unless the remedy is expressly agreed to be exclusive, in which case it is the sole remedy"; (2) "[w]here circumstances cause an exclusive or limited remedy to fail of its essential purpose, remedy may be had as provided in [the UCC]"; and (3) "[c]onsequential damages may be limited or excluded unless the limitation or exclusion is unconscionable." The limitation of consequential damages is prima facie unconscionable for injuries to persons in the case of consumer goods, but not where the loss is commercial.

In addition to this specific reference to unconscionability, there is a more general provision empowering the courts to invalidate any contract or any clause of a contract if it was "unconscionable at the time it was made."

Within this statutory framework, efforts to disclaim or modify warranties, or to limit remedies for their breach, must comply with these requirements:

1. Timeliness. The disclaimer or limitation of a warranty must

31. Id. § 2-316(3)(a). Moreover, "when the buyer before entering into the contract has examined the goods or the sample or model as fully as he desired or has refused to examine the goods there is no implied warranty with regard to defects which an examination ought in the circumstances to have revealed to him." Id. § 2-316(3)(b). Additionally, "an implied warranty can also be excluded or modified by course of dealing or course of performance or usage of trade." Id. § 2-316(3)(c).
32. Id. § 2-718(1).
33. Id. § 2-719(1)(a).
34. Id. § 2-719(1)(b).
35. Id. § 2-719(2).
36. Id. § 2-719(3).
37. Id. § 2-302.
be part of the contract; subsequent communication is ineffective. For example, a notice that is attached to a product and delivered after the contract has been made is ineffective.\textsuperscript{38}

2. \textit{Buyer awareness.} Even if a disclaimer or limitation is timely, it is inoperative unless the buyer has been given proper notice of its existence. The UCC requires that disclaimers of implied warranties be "conspicuous,"\textsuperscript{39} but it imposes no similar requirement on limitations of remedies.\textsuperscript{40} The courts, however, have sometimes gone beyond the terms of the UCC to protect unsophisticated buyers against inadvertent surrender of their rights.\textsuperscript{41} By contrast, sophisticated buyers have been held to a higher standard.\textsuperscript{42}


\textsuperscript{40} U.C.C. § 2-719; see Computerized Radiological Servs., Inc. v. Syntex Corp., 595 F. Supp. 1495 (E.D.N.Y. 1984), \textit{modified on other grounds}, 786 F.2d 72 (2d Cir. 1986).


3. The special status of express warranties. Express warranties cannot be disclaimed, and modifications must be consistent with the main purport of the warranty sought to be modified. This places a burden on the seller to assure that particular affirmations are not construed as express warranties. By appropriate language, express warranties can be negated—that is, some statements never attain the status of warranties—thereby obviating the need for disclaimer.

4. Exclusivity of a limited remedy. The UCC requires that the exclusivity of limited remedies be made explicit. Otherwise, a limited remedy will be construed as an optional additional remedy and will not preclude other remedies available under the UCC.

5. Failure of a limited remedy. If an exclusive or limited remedy fails of its "essential purpose," other remedies become available. The two most common situations are: (1) instances in which the exclusive remedy is the repair or replacement of defective products or parts, and the seller fails to make timely replacement or repair; and (2) instances in which the buyer's right to object to deficiencies is so narrowly circumscribed as to preclude meaningful objections to latent defects. The first category is unremarkable; wholly apart from rem-

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43. U.C.C. § 2-316(1); see, e.g., Northern States Power Co. v. ITT Meyer Indus., Div. of ITT Grinnell Corp., 777 F.2d 405 (8th Cir. 1985) (A disclaimer was held ineffective when it conflicted with an express warranty.); Consolidated Data Terminals v. Applied Digital Data Sys., Inc., 708 F.2d 385 (9th Cir. 1983) (Specific warranty language prevails over a general disclaimer where the two cannot be reasonably reconciled.)


45. U.C.C. § 2-719(1)(b).

46. Id. § 2-317; see, e.g., Council Bros. v. Ray Burner Co., 473 F.2d 400 (5th Cir. 1973); Gramling v. Baltz, 253 Ark. 261, 485 S.W.2d 183 (1972); District Concrete Co. v. Bernstein Concrete Corp., 418 A.2d 1030 (D.C. 1980).

47. U.C.C. § 2-719(2).


edy limitations, the seller has breached its duty to repair or replace. The second category is more troublesome. An explicit limitation on the buyer’s right to object may involve a deliberate allocation of risk that should not be disturbed under the guise of preserving remedial rights.

Limited remedies—such as a restriction to repair or replace—are usually accompanied by an exclusion of consequential damages. If the seller does not make timely repairs or replacements, the exclusion of consequential damages may also be challenged. Under such circumstances, the courts are inclined to allow consequential damages when necessary to assure that the buyer receives the benefit of its bargain.\(^5\) In other cases, however, the exclusion of consequential dam-

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\item These decisions frequently rely on Section 1-204 of the Uniform Commercial Code, prohibiting manifestly unreasonable time limits, and Section 2-302, prohibiting unconscionable contract provisions. See Eddy, On the “Essential” Purposes of Limited Remedies: The Metaphysics of UCC Section 2-719(2), 65 CALIF. L. REV. 28 (1977).
\item By contrast, relatively short time limits on express warranties have been sustained in a number of cases. See Earman Oil Co. v. Burroughs Corp., 625 F.2d 1291 (5th Cir. 1980) (90 days); Polygram, S.A. v. 32-03 Enters., 697 F. Supp. 132 (E.D.N.Y. 1988) (same); Office Supply Co. v. Basic/Four Corp., 538 F. Supp. 776 (E.D. Wis. 1982) (same); Aplications Inc. v. Hewlett-Packard Co., 501 F. Supp. 129 (S.D.N.Y. 1980) (same), aff’d per curiam., 672 F.2d 1076 (2d Cir. 1982); Badger Bearing Co. v. Burroughs Corp., 444 F. Supp. 919 (E.D. Wis. 1977) (same), aff’d per curiam, 588 F.2d 838 (7th Cir. 1978); cf. Landsman Packing Co. v. Continental Can Co., 864 F.2d 721 (11th Cir. 1989) (submitting reasonableness of 30-day limit to jury); Hart Eng’g Co. v. FMC Corp., 593 F. Supp. 1471 (D.R.I. 1984) (sustaining a one-year warranty limit).
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ages is viewed as severable from the failed remedy; the buyer may recover only direct damages (diminution in value or cost of repair or replacement), but not consequential damages (such as lost profits).

6. Preservation of a minimum remedy. In cases of unequal bargaining power, a court may strike limitations on remedies in order to preserve a minimum remedy for the buyer. For example, deficiencies in seeds, herbicides, and pesticides may lead to extensive crop losses by farmer-purchasers. In these circumstances, some courts have


For a general discussion, see Foss, When to Apply the Doctrine of Failure of Essential Purpose to an Exclusion of Consequential Damages: An Objective Approach, 25 DUQ. L. REV. 551 (1987).
allowed farmers to recover for such losses despite limitations on remedies which purported to restrict the buyers to the recovery of the purchase price.\textsuperscript{52} Other courts, however, have sustained such limitations as permissible allocations of risk.\textsuperscript{53}

In most other cases involving commercial loss, courts have sustained both limited remedies and complete disclaimers. Nonetheless, if the buyer is relatively unsophisticated and the seller is the stronger party, some courts intervene to protect the buyer—invoking the doctrine of unconscionability.\textsuperscript{54}

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For example, in *A & M Produce Co. v. FMC Corp.*, A & M, an agricultural company, purchased a tomato processing machine from FMC. The contract of sale contained a disclaimer of warranties and an exclusion of consequential damages. When the machine failed to function properly, A & M lost its crop. In an action by A & M to recover the value of its lost crop, the court held that both the disclaimer and the exclusion were inoperative. The court found the provisions to be procedurally unconscionable because the parties were of disparate size and experience; the disclaimer and exclusion were on the reverse side of a printed form and were not called to the buyer's attention; and the terms were not subject to negotiation. The court also found the provisions to be substantively unconscionable, ruling that it was unreasonable to assume that “a buyer would purchase a standardized mass-produced product from an industry seller without any enforceable performance standards,” and that the seller was in a better position to bear the risks of nonperformance. An inexperienced buyer had relied on the expertise of FMC, and the court held FMC accountable for the product's failure.

In contrast, a limitation of liability provision was found not to be unconscionable in *Aetna Casualty & Surety Co. v. Eastman Kodak Co.* In *Aetna*, the insurer of National Geographic sought damages for film improperly processed by Kodak. The processing was incidental to sale of the film, and the contract of sale provided that Kodak would replace damaged film but would not be liable for other damages. The court observed that damage to film could cause large sentimental loss (a parent's picture of a child) or substantial commercial loss (pictures taken in a space flight). The court emphasized:

There does not appear any way that the company can fairly price its services unless it does limit its liability in some way, because the efforts that it otherwise [would take] in order to pro-

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56. *Id.* at 478-79, 186 Cal. Rptr. at 117.
57. *Id.*
58. *Id.* at 480, 186 Cal. Rptr. at 118.
59. *Id.* at 493, 186 Cal. Rptr. at 127.
60. *Id.* at 490-91, 186 Cal. Rptr. at 124-25.
61. *Id.* at 491-92, 186 Cal. Rptr. at 125.
62. *Id.* at 492, 186 Cal. Rptr. 125-26.
64. *Id.* at 54.
65. *Id.* at 54-55.
66. *Id.* at 55.
tect against those anticipations of what the risks might be, will price the product right out of the market. . . .

If required to answer every conceivable lawsuit which might be filed as a result of defects [in the film or its processing], the cost to the consumer of the film would be many times as much as it presently is . . . .

The limitation on liability was sustained as not unconscionable.

A & M Produce and Aetna reflect the general approach of the courts to unconscionability issues in commercial cases. When a limitation on liability has not been adequately disclosed by a seller, particularly to an unsophisticated or uninformed buyer, the courts are likely to strike down such a limitation as unconscionable. The courts, as in A & M Produce, may also comment on the disparate size and bargaining position of the parties and the absence of negotiation over the terms of the limitation. By contrast, if the buyer is adequately informed of the limitation, the provision is likely to be sustained—without regard to the relative bargaining positions of the parties or the presence or absence of negotiations. In Aetna, for example, the provision was a standardized term imposed by the dominant firm in the photography industry.

C. Additional Limitations on Liability

There are four additional limitations on the liability of a seller under the Uniform Commercial Code:

1. Notice. On discovery of a breach of warranty, the buyer "must within a reasonable time . . . notify the seller of breach or be

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67. Id. at 56.


barred from any remedy.” This should pose no problem for commercial parties represented by competent counsel, but it might pose problems for an unwary buyer.

2. Privity. A buyer may not be able to recover for breach of warranty if it is not “in privity” with the seller—that is, if the purchase was not made directly by the buyer from the seller, but was made through intermediaries. States have varied the provisions of the UCC in this respect, and judicial interpretations have also diverged. The ability of buyers to sue remote manufacturers is an important part of devising a solution to the problem of accountability for commercial loss. This issue is addressed in a subsequent section.

3. Foreseeability. The UCC provides that a seller is not responsible for losses other than those arising from physical injury to person or property, unless the losses result from the buyer’s “general or particular requirements and needs of which the seller at the time of contracting had reason to know.” This limitation, however, has not been of decisional significance in any of the many litigated cases examined in the preparation of this Article. As long as a machine or other product is used for its intended purpose, a seller will be held responsible for losses expected to follow from product failure: damage to work-in-progress, damage to associated equipment, and disruption of the buyer’s business resulting in lost profits. It is not necessary to show that the manufacturer anticipated the particular losses or their magnitude, or that it knew precisely how each of its products would be used by multifarious buyers.

4. Statute of limitations. The UCC provides that an action for breach of warranty must generally be commenced within four years of the tender of delivery of the goods, “regardless of the aggrieved party’s lack of knowledge of the breach.” The parties may shorten the statutory period to not less than one year, but they may not

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70. See infra Section V.
71. The UCC has three variations of Section 2-318, entitled “Third Party Beneficiaries of Warranties Express or Implied.” U.C.C. § 2-318. There are further variations in individual states. See 1 J. White & R. Summers, supra note 26, at 531-41.
72. See infra notes 208-15.
73. See infra Section V.
74. U.C.C. § 2-715(2)(a).
75. See supra notes 27-28.
77. U.C.C. § 2-725(1), (2).
extend it. If, however, "a warranty extends to future performance of the goods and discovery of the breach must await the time of such performance the cause of action accrues when the breach is or should have been discovered."  

The statute of limitations is a device for allocation of risks. If the sales transaction is silent on the issue, buyers are barred unless they discover and act on defects within four years of tender of delivery. Thus, buyers bear the risk of defects discovered after the expiration of the four-year period. But buyers can bargain for a longer period (by having the warranty extend to future performance), and sellers can bargain for a shorter period (not less than one year). Still, the UCC's statute of limitations poses a formidable obstacle to recovery when latent defects manifest themselves years after the delivery of a defective product.

III. EXCURSIONS IN TORT LAW

Despite the extensive treatment of sales transactions in the Uniform Commercial Code, commercial buyers frequently bring actions in tort. These litigation decisions are not adventitious; buyers seek to circumvent the requirements and limitations of the UCC. In an action in tort, neither privity nor notice to the manufacturer is required. The requirement of foreseeability may also be relaxed (although this does not seem to have been a factor in any of the reported cases). The statute of limitations will run from the time of loss rather than from the time of delivery (and this may be of great significance in at least some cases involving latent defects). Most importantly for present purposes, warranty disclaimers and limitations on remedy may be disregarded by courts in tort cases; courts are more hostile to tort disclaimers than to warranty disclaimers.

Efforts to recover commercial losses by suing in tort have

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78. Id. § 2-725(1).
79. Id. § 2-725(2).
80. For several notorious examples of cases involving the sale of asbestos products, see infra note 105. The statute of limitations is nonetheless subject to "tolling" under state law, see U.C.C. § 2-725(3), and this may provide a solution. See Werber v. Mercedes-Benz of N. Am., Inc., 199 Cal. Rptr. 765 (Ct. App. 1984) (tolling the statute of limitations until the discovery of a latent defect in a consumer case). Werber is not definitive on this issue; the case was decertified by the California Supreme Court, precluding its citation as precedent in the California courts. See note at 152 Cal. App. 3d 1039 (1984).

Whether the UCC statute of limitations should be modified, to permit recovery for latent defects discovered long after the sale, is a legitimate issue—particularly where, as in the asbestos cases, the sellers have engaged in a pattern of concealment. The resolution of that issue, however, does not depend on transforming warranty claims into tort claims.
spawned an expansive body of litigation. Most of the cases have involved claims in negligence and strict product liability, but claims premised on misrepresentation have also been asserted.

A. Negligence and Strict Liability

The starting point is the landmark California case of Seely v. White Motor Co. In Seely, the purchaser of a truck found that it bounced violently, an action known as "galloping." Despite repeated efforts, the seller was unable to correct the deficiency. Seely sued for the purchase price of the truck and for the profits that he lost because he was unable to make normal use of the truck. The California court allowed recovery on the ground that the manufacturer had breached an express warranty. The court refused, however, to


82. 63 Cal. 2d 9, 403 P.2d 145, 45 Cal. Rptr. 17 (1965).
83. Id. at 12, 403 P.2d at 147, 45 Cal. Rptr. at 19.
84. Id.
85. Id. at 19, 403 P.2d at 152, 45 Cal. Rptr. at 24.
allow recovery on a theory of strict product liability.  

The distinction that the law has drawn between tort recovery for physical injuries and warranty recovery for economic loss [turns on] the nature of the responsibility a manufacturer must undertake in distributing his products. He can appropriately be held liable for physical injuries caused by defects by requiring his goods to match a standard of safety defined in terms of conditions that create unreasonable risks of harm. He cannot be held for the level of performance of his products in the consumer's business unless he agrees that the product was designed to meet the consumer's demands. . . . Even in actions for negligence, a manufacturer's liability is limited to damages for physical injuries and there is no recovery for economic loss alone.

The Seely court observed that the basis of strict product liability was the avoidance of "overwhelming misfortune" to injured persons, losses that can be "insured by the manufacturer and distributed among the public as a cost of doing business." This rationale of strict product liability "in no way justifies requiring the consuming public to pay more for their products so that a manufacturer can insure against the possibility that some of his products will not meet the business needs of some of his customers."

In another aspect of the case, Seely sought recovery for damage sustained by the truck when it overturned in an accident. The claim was denied because "galloping" was not shown to have caused the accident. The court nonetheless agreed that "the doctrine of strict liability in tort should be extended to govern physical injury to plaintiff's property." The totality of the court's reasoning was that "[p]hysical injury to property is so akin to personal injury that there is no reason for distinguishing them."

In general, the position taken by the California court in Seely has been followed in subsequent decisions in other states. If a product fails to function properly, the buyer usually incurs expenses in repairing or replacing the product. In addition, the buyer's business may be disrupted, resulting in lost profits. Such "economic losses" generally cannot be recovered in tort actions alleging negligence or strict prod-

86. Id. at 13-14, 403 P.2d at 148, 45 Cal. Rptr. at 20.
87. Id. at 18, 403 P.2d at 151, 45 Cal. Rptr. at 23.
88. Id. at 18-19, 403 P.2d at 151, 45 Cal. Rptr. at 23.
89. Id. at 19, 403 P.2d at 151, 45 Cal. Rptr. at 23.
90. Id., 403 P.2d at 152, 45 Cal. Rptr. at 24.
91. Id.
92. Id.
93. Id.
uct liability. If, however, the defect in the product causes physical injury to property, tort remedies are available. This distinction is easy to apply in some cases, but it poses severe difficulties in others.

There is no question that recovery may be had, in strict liability or in negligence, if a defective product poses a hazard to other property of the buyer and inflicts damage on that property. For example, in *Hales v. Green Colonial, Inc.*, the plaintiffs brought an action in strict liability when a gas heater manufactured by the defendant malfunctioned and started a fire that destroyed the plaintiffs' premises. The court awarded damages for the property loss, for the cost of cleanup and repair, and for lost profits. The court observed:

> We are not here dealing with the typical "loss of bargain" issue. There is no claim that loss of profits were caused by the defective heater inadequately heating the building or that the plaintiffs incurred damages from loss of use of the heater. . . . Here the defective heater burned plaintiffs' building and disrupted their business for eight months. Loss of profits by reason of the tortious destruction of the plaintiffs' business was a foreseeable damage ordinarily cognizable in tort liability . . . .

Recovery has been allowed in other cases in which property of the buyer (other than the purchased product) was damaged by defects that caused fires or explosions, contributed to the crash of air-

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94. See infra note 119.
95. See infra notes 96-111.
96. 490 F.2d 1015 (8th Cir. 1974).
97. Id. at 1017.
98. Id. at 1022.
99. Id.
PRODUCT DEFECTS

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craft;\textsuperscript{102} or the collapse of industrial equipment;\textsuperscript{103} destroyed or contaminated agricultural products;\textsuperscript{104} or damaged or contaminated buildings.\textsuperscript{105} Some courts have gone further, permitting recovery when the defective product rendered a building or work environment unsafe, even though no personal injury or property damage had occurred.\textsuperscript{106} Others have allowed recovery when the property dam-

\begin{enumerate}
\item James v. Bell Helicopter Co., 715 F.2d 166 (5th Cir. 1983) (strict liability); Sterner Aero AB v. Page Airmotive, Inc., 499 F.2d 709 (10th Cir. 1974) (negligence and strict liability).
\item Some courts have gone further, permitting recovery when the defective product was a component of the aircraft, not the aircraft itself.
\end{enumerate}
age was to work-in-progress or was otherwise relatively minor in scope. The endangerment cases, and those basing tort liability on trivial and incidental impacts on physical property, have made the distinction between property damage and economic loss indistinct and elusive. At times, the inquiry takes on a metaphysical quality—as in the finding of one court that a malfunctioning mechanical planter had inflicted property damage on a crop that had never been planted.

When, as a result of a defect, the purchased product alone is


damaged or destroyed in an accident-like occurrence, many courts allow recovery in negligence and strict liability.\textsuperscript{109} There is, however, a substantial minority view,\textsuperscript{110} recently reinforced by the United States Supreme Court in an admiralty decision. In \textit{East River Steamship Corp. v. Transamerica Delaval, Inc.},\textsuperscript{111} Seatrain and affiliated

\begin{itemize}
  \item U.S. 858 (1986).
\end{itemize}
companies contracted with Delaval for the construction and installation of turbines in vessels owned by Seatrain. The turbines in three ships were defective, and a fourth turbine was improperly installed. Plaintiffs sued in strict liability and negligence for the cost of repairing the turbines and for profits lost while the ships were inoperable. The Supreme Court held that neither theory was available in the absence of personal injury or damage to other property. The Court adopted the reasoning of Seely, but extended that reasoning to apply to damage to the defective product:

We realize that the damage [to the defective product] may be qualitative, occurring through gradual deterioration or internal breakage. Or it may be calamitous. But either way, since by definition no person or other property is damaged, the resulting loss is purely economic. Even when the harm to the product itself occurs through an abrupt, accident-like event, the resulting loss due to repair costs, decreased value, and lost profits is essentially the failure of the purchaser to receive the benefit of its bargain—traditionally the core concern of contract law.

The Court emphasized that warranty law was adequate to give the buyer “the full benefit of its bargain” while imposing reasonable limitations on the scope of liability. By contrast, the Court stated that recovery in tort “could subject the manufacturer to damages of an indefinite amount.”

In the absence of accident-like damage to the product itself, or to other property of the buyer, the purchaser typically will be denied recovery in negligence or in strict liability. A minority view exists, however, mustering particular support in the case of negligence. For example, in Berg v. General Motors Corp., GM manufactured an engine, installed by an intermediary in plaintiff’s fishing boat. When the engine malfunctioned, the plaintiff sought recovery on a theory of negligence. The damages sought were economic in nature—lost profits resulting from curtailed operations. In
allowing recovery, the court reasoned:

The negligent manufacture of [an article purchased by persons operating commercial ventures] poses the foreseeable risk that the output of the entire enterprise would be diminished or even temporarily halted. The specie of harm generated by such work stoppage (lost profits) is well within the zone of danger created and foreseen by the negligent act. . . . [T]here is nothing in the tort of negligence which prevents lost profits from being a specie of recompensable harm which is actionable against the remote manufacturer.\textsuperscript{124}

Protection of the buyer may be supplemented by concerns for the consuming public. In \textit{Ales-Peratis Foods International, Inc. v. American Can Co.},\textsuperscript{125} a packer sustained substantial financial losses when it was unable to package quantities of abalone as a result of defective cans supplied by the defendant.\textsuperscript{126} In upholding the packer's negligence claim, the court emphasized that the cans, if used, would have posed hazards to consumers.\textsuperscript{127} The court observed that society should seek to deter the production of such defective cans and encourage their removal from the stream of commerce when detected by intermediaries;\textsuperscript{128} “[s]hifting this economic loss to the can manufacturer accomplishes both societal objectives.”\textsuperscript{129} Moreover, under these circumstances, the packer should not be given the option to pay a lower price and obtain a less safe product. This assumes that “a packager of foods would be willing to gamble on receiving cans which would be not only worthless, but also if used possibly expose his customers to harm and himself to liability.”\textsuperscript{130}

The lines sought to be drawn in these cases are artificial and unsound. In \textit{Seely}, for example, why distinguish between lost profits attributable to the non-use of the truck and damage to the truck resulting from an accident? Both are dollars out of Seely's pocket. Further, Seely could have insured against accidental damage to the truck if he had wished; a contractual allocation of that risk to Seely would have imposed no unusual burden upon him. Similarly, the buyer in \textit{Hales} could have obtained casualty insurance to cover its fire loss; there was no need to hold the seller accountable in tort in order to afford protection otherwise unavailable to the buyer.

\textsuperscript{124} \textit{Id.} at 593-94, 555 P.2d at 823. The decision in \textit{Berg} has been superseded by a statute prescribing the opposite result. \textit{See Wash. Rev. Code Ann.} § 7.72.010(6) (Supp. 1989).
\textsuperscript{125} 164 Cal. App. 3d 277, 209 Cal. Rptr. 917 (1985).
\textsuperscript{126} \textit{Id.} at 280-81, 209 Cal. Rptr. at 918.
\textsuperscript{127} \textit{Id.} at 290, 209 Cal. Rptr. at 924-25.
\textsuperscript{128} \textit{Id.}
\textsuperscript{129} \textit{Id.}, 209 Cal. Rptr. at 925.
\textsuperscript{130} \textit{Id.}
East River reduced some of the uncertainty surrounding this issue by rejecting distinctions respecting injury to the product sold (thereby implicitly rejecting Seely’s approach to accidental damage to the truck). But the outcome in Hales and related cases, involving damage to “other property,” was not affected by East River. As long as these rulings stand, it is difficult to resist the results reached in Berg and Ales-Peratis.

If a negligent manufacturer can be held accountable for injuries to tangible property of the buyer, why not recognize accountability for other losses of a pecuniary character—which may be larger than tangible property losses and more burdensome for the buyer to absorb? The answer, quite simply, is that none of these claims should be cognizable in tort. If there is a contract of sale, commercial losses can be allocated in that contract—either expressly or by implication in the absence of an express provision. One basis for the distinction in Seely was the assumption that strict liability could not be waived by contract. But the operative rule, recognized in a substantial number of subsequent opinions, is clearly to the contrary. In the context of commercial dealings, both negligence and strict liability may be waived by contract.


One way of responding to the question of waiver is to hold that strict liability is inapplicable to commercial cases. This is the approach adopted in California, the state that produced the Seely dictum. In *Kaiser Steel Corp. v. Westinghouse Electric Corp.*, the purchaser of a defective motor sued for profits lost in the shutdown of its plant, alleging strict liability among other theories. The court held that "products liability does not apply as between parties who: (1) deal in a commercial setting; (2) from positions of relatively equal economic strength; (3) bargain the specifications of the product; and (4) negotiate concerning the risk of loss from defects in it." The court emphasized:

Since the manufacturer and buyer have bargained in a commercial setting not only for the product but also for the measure and mode of reimbursement for defects in the product, any societal interest in

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134. *Id.* at 740, 127 Cal. Rptr. at 840.
135. *Id.* at 748, 127 Cal. Rptr. at 845.
loss shifting is absent. Whether the loss is thrust initially upon the manufacturer or customer, it is ultimately passed along as a cost of doing business included in the price of the products of one or the other and thus spread over a broad commercial stream.\(^\text{136}\)

Other courts have sustained contractual allocations of risk—including tort liability—because they perceived them to be both efficient and fair. In *Ebasco Services, Inc. v. Pennsylvania Power & Light Co.*,\(^\text{137}\) an electric utility sought to recover the cost of replacement power made necessary by malfunctioning equipment.\(^\text{138}\) Upholding a limitation of liability provision against claims based on warranty, negligence, and strict liability, the court observed:

(a) [Because of the nature of the equipment], frequent forced or scheduled outages are inevitable and cannot be completely eliminated in spite of the extraordinary care and precision with which such machinery is designed, manufactured or operated.

(b) The potential financial risk of these outages is too great for the suppliers to assume under the prices that are charged for the equipment. Furthermore, they could not be predicted or calculated with any precision.

(c) Utilities can manage and control the risk more efficiently and at less cost than the suppliers.\(^\text{139}\)

A similar opinion was voiced in *Delta Air Lines, Inc. v. Douglas Aircraft Co.*\(^\text{140}\) Delta, the purchaser of an airplane from Douglas, brought an action against the manufacturer to recover for damages sustained by the aircraft when a nose wheel collapsed.\(^\text{141}\) Delta asserted that the manufacturer was negligent, but a provision in the purchase contract excused Douglas in the event of negligence:\(^\text{142}\)

Under the contract before us, Delta (or its insurance carrier if any) bears that risk in return for a purchase price acceptable to it; had the clause been removed, the risk would have fallen on Douglas (or its insurance carrier if any), but in return for an increased price deemed adequate by it to compensate for the risk assumed. We can see no reason why Delta, having determined, as a matter of business judgment, that the price fixed justified assuming the risk of loss, should now be allowed to shift the risk so assumed to Douglas, which had neither agreed to assume it nor been compen-

\(^{136}\) Id.
\(^{138}\) Id. at 167.
\(^{139}\) Id. at 222.
\(^{140}\) 238 Cal. App. 95, 47 Cal. Rptr. 518 (1965).
\(^{141}\) Id. at 97, 47 Cal. Rptr. at 519.
\(^{142}\) Id. at 97, 100, 47 Cal. Rptr. at 519, 521.
sated for such assumption.\textsuperscript{143}

While these cases reflect the general view, some courts have expressed a reluctance to permit waivers of negligence and strict liability, particularly in cases where products pose a risk of physical injury to person or property. For example, in \textit{Salt River Project Agricultural Improvement & Power District v. Westinghouse Electric Corp.},\textsuperscript{144} a gas turbine generator purchased by Salt River from Westinghouse exploded—causing $1.9 million in damage to itself and $50 thousand in consequential damages.\textsuperscript{145} The court sustained a limitation of liability clause as to Salt River’s warranty claim,\textsuperscript{146} but remanded for further hearings as to the applicability of the limitation to Salt River’s claim in strict product liability.\textsuperscript{147} In so deciding, the court emphasized that the “law frowns upon tort disclaimers because they tend to undermine the prophylactic principles of tort law” that provide incentives to produce safe products.\textsuperscript{148} There are a number of other decisions to the same effect.\textsuperscript{149} An extreme example is \textit{Held v. Mitsubishi Aircraft International, Inc.}\textsuperscript{150} In \textit{Held}, the purchaser of an aircraft sought to recover for damages incurred in a crash, arguing

\begin{itemize}
\item\textsuperscript{143} \textit{Id.} at 104-05, 47 Cal. Rptr. at 524. There was evidence that Douglas had been prepared to provide a more extensive warranty for a higher price. \textit{Id.} at 103 n.5, 47 Cal. Rptr. at 523 n.5; \textit{accord Appalachian Ins. Co. v. McDonnell Douglas Corp.}, 214 Cal. App. 3d 1, 262 Cal. Rptr. 716 (1989).
\item\textsuperscript{144} 143 Ariz. 368, 694 P.2d 198 (1984).
\item\textsuperscript{145} \textit{Id.} at 372, 374, 378, 694 P.2d at 202, 204, 208.
\item\textsuperscript{146} \textit{Id.} at 374, 694 P.2d at 204.
\item\textsuperscript{147} \textit{Id.} at 384-85, 694 P.2d at 214-15.
\item\textsuperscript{148} \textit{Id.} at 384, 694 P.2d at 214.
\item\textsuperscript{150} 672 F. Supp. 369 (D. Minn. 1987) (Texas law).
that the aircraft had been negligently designed. The contract of sale provided that the seller's repair-or-replace warranty was "in lieu of all other obligations, liabilities and duties [of the seller] for any loss, expense, or damage arising out [sic] the sale, use or operation of the [aircraft], whether caused by [the seller's] negligence or otherwise." The court held that because "[t]he clause does not refer to losses arising out of design defects . . . it is not effective to preclude an action based on negligent design."

Accordingly, the availability of an action in negligence or in strict product liability may be significant, even in circumstances in which the parties are said to be free to reallocate risks, if in practice courts adopt hostile attitudes towards contractual provisions that seek to achieve just such a reallocation. Business uncertainties could be reduced, and the relevant issues could be more sharply focused, if commercial buyers were compelled to rely exclusively on the contract remedies of the UCC. The Code provides for the recovery of all categories of damage—to the product itself, to other tangible property, and to the profitability of the buyer's business—but the UCC also provides a structured basis for allocating risks of loss, one generally respected by the courts.

B. Misrepresentation

In the context of product liability, the law of misrepresentation is unusually complex. If physical harm results from a misrepresentation, liability may be premised on either negligence or strict product liability. If, however, the only loss is pecuniary, the Restatement of Torts allows recovery if the misrepresentation is the product of negligence, but affords only limited relief (in the nature of restitution) if the representation is innocent.

In judicial determinations involving pecuniary loss, the courts are divided. The leading case sustaining liability is *Randy Knitwear,*
In *Randy Knitwear*, American Cyanamid manufactured resins, which were sold to fabric manufacturers (Apex and Fairtex), for use in treating fabrics to make them shrink-resistant. Randy bought fabric from Apex and Fairtex, and, when the fabric shrank, Randy sued Apex, Fairtex, and American Cyanamid for pecuniary loss. American Cyanamid defended against warranty liability by arguing that there was no privity. The court upheld Randy's claim on the basis of misrepresentation, finding that American Cyanamid had made representations as to the shrink-resistant quality of fabrics treated with its resins by advertising its product, and by permitting Apex and Fairtex to use labels attesting to the use of American Cyanamid's product. The court reasoned:

We perceive no warrant for holding . . . that strict liability should not here be imposed because the defect involved, fabric shrinkage, is not likely to cause personal harm or injury. . . . Since the basis of liability turns not upon the character of the product but upon the representation, there is no justification for a distinction on the basis of the type of injury suffered or the type of article or goods involved.

While the opinion is premised on a theory of misrepresentation, *Randy Knitwear* could be viewed in more traditional terms, as one permitting recovery for breach of express warranty notwithstanding an absence of privity.

Other courts, however, have based liability on tortious misrepresentation in circumstances in which a warranty claim could not have been sustained. In *Clements Auto Co. v. Service Bureau Corp.*, for example, the buyer of an electronic data processing system sued the supplier for breach of warranty and for fraudulent misrepresentation. The court held that the warranty claim was barred by a disclaimer, but that the fraud claim was actionable even though: (1) the misrepresentation (as to the capability of the system) was neither deliberate nor negligent; (2) the only losses sustained were economic in character; and (3) the contract contained an integration clause purporting to bar reliance upon oral representations.

159. Id. at 8-9, 181 N.E.2d at 400, 226 N.Y.S.2d at 364.
160. Id. at 9, 181 N.E.2d at 400, 226 N.Y.S.2d at 364.
161. Id. at 9, 181 N.E.2d at 400, 226 N.Y.S.2d at 364-65.
162. Id. at 9, 181 N.E.2d at 400, 226 N.Y.S.2d at 365.
163. Id. at 15, 181 N.E.2d at 403-04, 226 N.Y.S.2d at 369-70.
164. 444 F.2d 169 (8th Cir. 1971) (Minnesota law).
165. Id. at 174.
166. Id. at 190.
167. Id. at 176, 178, 190-91; accord Vicon, Inc. v. CMI Corp., 657 F.2d 768 (5th Cir. 1981)
There are divergent views on this type of case. In *Wisconsin Power & Light Co. v. Westinghouse Electric Corp.*, the buyer of a transformer sought to recover for misrepresentation after the warranty on the transformer had expired. The buyer claimed that the transformer was not free of defects as the seller had represented. The court rejected this claim, observing that the challenged representation:

[was] not a material representation, but is rather a promise to replace or repair such goods should there prove to be such defects. It is a promise of future performance of a duty that is limited by the terms of a warranty. If plaintiffs in this case can go forward with such a claim, it is clear that no warranty limitations can be effective. Warranties could no longer be limited in time or as to remedies.


168. 645 F. Supp. 1129 (W.D. Wis. 1986) (Wisconsin law), aff'd, 830 F.2d 1405 (7th Cir. 1987).
169. Id. at 1134-35.
170. Id.
In addition to divergent views on whether misrepresentation actions are available in commercial sales transactions, there is disagreement as to the efficacy of disclaimers and other limitations on liability. There is also disagreement on whether the parol evidence rule, fortified by contract provisions purporting to bar both prior agreements and reliance on prior representations, is effective to exclude misrepresentation claims.


One case, however, goes too far. In Werner & Pfleiderer Corp. v. Gary Chem. Co., 697 F. Supp. 808 (D.N.J. 1988) (New Jersey law), the court refused to allow a claim of fraud in a dispute between commercial entities of relatively equal bargaining power. The seller was charged with knowingly delivering a machine that could not meet the guaranteed production rates specified in the contract. The buyer was limited to remedies under the contract or the UCC. Id. at 814-15. But if the contract had been induced by fraud, the buyer should not be bound by the contract and should be permitted to invoke the full range of tort remedies.


For cases rejecting disclaimers, see Vicon, Inc. v. CMI Corp., 657 F.2d 768 (5th Cir. 1981) (Texas law); M-A-S-H, Inc. v. Fiat-Allis Constr. Mach. Inc., 461 F. Supp. 79 (E.D. Tenn. 1978) (Tennessee law), aff'd per curiam, 627 F.2d 1091 (6th Cir. 1980); Walker Truck Contractors, Inc. v. Crane Carrier Co., 405 F. Supp. 911 (E.D. Tenn. 1975) (Tennessee law); Laudisio v. Amoco Oil Co., 108 Misc. 2d 245, 437 N.Y.S.2d 502 (Sup. Ct. 1981). In the first three cases, it was unclear whether the courts' rulings were that liability could not be disclaimed, or that the contract terms had simply failed to disclaim liability in the particular cases. In Laudisio, moreover, the discussion appears to have been directed to fraud. In other cases, fraud was also at issue and disclaimers were held to be ineffective. See Agristor Leasing v. Saylor, 803 F.2d 1401 (6th Cir. 1986) (Tennessee law); Price Bros. v. Olin Constr. Co., 528 F. Supp. 716 (W.D.N.Y. 1981) (New York law); O'Neil v. International Harvester Co., 40 Colo. App. 369, 575 P.2d 862 (1978); George Robberecht Seafood, Inc. v. Maitland Bros., 220 Va. 109, 255 S.E.2d 682 (1979).

Two recent cases illustrate some of the complexities involved. In *Public Service Co. v. Westinghouse Electric Corp.*,\(^{174}\) the buyer of a steam turbine generator claimed that the seller had been guilty of fraud in failing to provide the buyer with timely information on the malfunctions of other turbines of the same type.\(^{175}\) The buyer's turbine sustained damage subsequent to these other incidents and after the expiration of the warranty on its turbine.\(^{176}\) The court rejected the buyer's claim, stating that to "[a]llow[] the claim to be brought under a theory of intentional tort (herein, fraud) would effectively bypass the entire body of contract law."\(^{177}\) A similar result was reached on similar facts in *Arkwright-Boston Manufacturers Mutual Insurance Co. v. Westinghouse Electric Corp.*\(^{178}\) There, the seller's engineers knew of prior turbine malfunctions at the time of the sale to the buyer, but the seller's sales personnel did not obtain this information until a later date (at which time the buyer was notified).\(^{179}\) The court refused to allow the nondisclosure to serve as the basis for an action of tortious misrepresentation or as a basis for invalidating the seller's warranty limitations;\(^{180}\) it found that the seller's conduct did not amount to "overreaching or sharp practices."


\(^{175}\) *Id.* at 1282, 1289-90.

\(^{176}\) *Id.* at 1283-84.

\(^{177}\) *Id.* at 1290.

\(^{178}\) 844 F.2d 1174 (5th Cir. 1988) (Texas law).

\(^{179}\) *Id.* at 1184.

\(^{180}\) *Id.*

\(^{181}\) *Id.* There is a division in the cases on whether warranty limitations can be circumvented by charging the seller with the tort of negligently failing to warn the buyer of deficiencies discovered subsequent to sale. For decisions supporting such a duty, see *Miller Indus. v. Caterpillar Tractor Co.*, 733 F.2d 813 (11th Cir. 1984) (negligent failure to warn actionable under admiralty law); *McConnell v. Caterpillar Tractor Co.*, 646 F. Supp. 1520 (D.N.J. 1986) (same). But most courts have refused to permit recovery for negligent failure to warn when the claim was for economic loss. See *Noric Supply Ships v. General Motors Corp.*, 876 F.2d 501 (5th Cir. 1989) (admiralty); *Island Creek Coal Co. v. Lake Shore Inc.*, 692 F. Supp. 629 (W.D. Va. 1988) (Michigan law); *Frey Dairy v. A.O. Smith Harvestore*, 680 F. Supp. 253 (E.D. Mich. 1988), *aff'd*, 886 F.2d 128 (6th Cir. 1989) (Michigan law); *Zidell, Inc. v. Cargo Freight*, 661 F. Supp. 960 (W.D. Wash. 1987) (admiralty); *Allen v. Toshiba Corp.*, 599 F.
In commercial sales transactions, the tort of misrepresentation is largely redundant. If a seller makes material representations which turn out to be false, the buyer can sue for breach of express warranty. If a seller fails to make disclosures about an inferior or defective product, the buyer can sue for breach of implied warranty. In both cases, the claims of the aggrieved buyer are subject to the terms of the seller's warranty, including limitations on liability and restrictions on remedy. Even so, a seller would not be protected against all challenges. In cases involving deliberate fraud, a court would be justified in striking down these contractual impediments to the buyer's claim and permitting recovery for misrepresentation as well as for breach of warranty. In most instances, however, the warranty claim should suffice to protect the buyer.

As in the case of negligence and strict liability, the issues will be more sharply focused and the contractual allocations of risk more generally respected if aggrieved buyers are compelled to proceed under the Uniform Commercial Code.

IV. THE ECONOMICS OF RISK ALLOCATION

The Uniform Commercial Code, as well as many of the judicial decisions concerned with contractual allocations of risk, assume that it is socially desirable to permit contracting parties to allocate risks. That assumption is sound, at least in the context of the commercial sales transactions examined in this Article. The assumption requires further explication, however, including a consideration of applicable limits. Should contractual allocations of risk be sustained despite inequality of bargaining power between buyer and seller? Is the case for contractual allocations undermined by imperfections in the knowledge of the contracting parties? We begin with the general case and then consider possible limitations.


If the position in this Article is adopted and the law of torts is held to be inapplicable to commercial sales transactions, a post-sale duty to warn could be imposed as a matter of contract law. As such, it would be amenable to more precise definition in the contract of sale—to the same extent as other specifications are made respecting the responsibilities of the seller.

182. The term "deliberate fraud" refers to statements known to be false and statements made by the seller without regard to their truth or falsity, with the intention of inducing reliance by the prospective buyer.

A. The Logic of Risk Allocation

The assumption of additional risk by the manufacturer, in the form of additional warranty responsibility, increases the manufacturer's costs in three ways: (1) product quality must be monitored to reduce the number of product failures; (2) a reserve must be accumulated (or an equivalent liability assumed) to compensate buyers for defects that occur despite improved quality control; and (3) transaction costs are incurred in processing warranty claims.

A buyer benefits from additional warranty protection in two ways: (1) to the extent that there are fewer product failures, the buyer will experience fewer incidents of damage to the purchased product, to other property of the buyer, and to the conduct of the buyer's business; and (2) to the extent that compensation is provided for product failures, the costs of any failures that do occur will be borne by the manufacturer rather than by the buyer. Like the manufacturer, the buyer incurs transaction costs in submitting warranty claims; the buyer's recovery will be reduced by such costs.

From a social perspective, it is desirable to extend warranty protection when the benefits to the buyer exceed the costs to the manufacturer. If the converse is true, and warranty costs exceed warranty benefits, warranty protection should be curtailed.

The typical manufacturer's warranty has three features: (1) a commitment, for a limited period, to repair or replace defective products or parts; (2) a disclaimer of all other warranties, express or implied; and (3) an exclusion of any liability for consequential damages. Under a wide range of circumstances, this form of warranty is likely to be more efficient than the statutorily prescribed remedies of the UCC. Consider the three general categories of commercial loss:

1. Damage or destruction of the purchased product. If the damage or destruction occurs within the warranty period and is a result of a product defect, the manufacturer is generally in the best position to provide a remedy of repair or replacement. It has the advantage of knowing its own product; it has the benefits of specialization and perhaps of economies of scale; and it can avoid the problem of moral hazard that arises if a buyer is free to spend the seller's money, with only loose constraints, in unilaterally obtaining replacement or repair. At the same time, the buyer is protected as long as the courts condition the exclusivity of the repair-or-replace remedy on timely and effective action by the manufacturer.184

2. Damage to other property of the buyer. Focusing initially on

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184. See supra notes 48, 50-51.
casualty losses (fires, explosions, and the like), the buyer may or may not be in the best position to avert the mishap. But the buyer is clearly in the best position to insure against the loss. The standard casualty policy protects the buyer from losses associated with accidents caused by product failures, without segregation of risks or charges. The premium on such policies will be related to the value of the buyer's property and the general risk involved in the buyer's activities. These are matters about which the seller has limited knowledge and almost no control. As to such losses, the buyer is in the best position to obtain optimal coverage under its own policy, described as first-party insurance. The same insurance would apply to damages to the purchased product, occurring after the expiration of the warranty period, as long as the loss is a casualty loss.

The avoidance of unnecessary transaction costs is a major advantage of having the buyer look to its own insurance company. Litigation over the liability of the seller can consume substantial resources, whether the suit is ultimately resolved in favor of the buyer or the seller.

3. Damage to the business of the buyer (including noncasualty property losses). Again, the buyer may or may not be in the best position to avert the mishap, but it is clearly in the best position to insure against the loss. The manufacturer-seller cannot obtain insurance against noncasualty losses to the buyer's business. By contrast, the buyer can obtain various types of insurance to guard against losses attributable to business interruption. Further, the buyer can struc-

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186. First-party insurance also enables the buyer and his insurance company to negotiate terms that are finely tuned to the costs and risks at stake, such as, ceilings, deductibles, copayments, and exclusions. See Goldberg, Accountable Accountants: Is Third-Party Liability Necessary?, 17 J. Legal Stud. 295, 305 (1988).


188. See A. Miller, "Types of Business Interruption Coverage Available" in Business Interruption Insurance: A Primer 4-5, 18-20 (1987); R. Morrison,
ture its operations (by maintaining spare parts, excess capacity, alternative operating modes, and the like) so as to minimize any compounding of losses.

Holding the manufacturer responsible for losses to the buyer's business is inherently inefficient because of problems of adverse selection. Assume, for example, that a machine has a probability of failure of .001 (despite all cost-justified quality control measures). Assume further that the machine is used in businesses with differing degrees of sensitivity to product failure. In A's business, a machine failure will cause losses of $5,000; in B's business, the losses will be $50,000; and in C's business, the losses will be $500,000. If the manufacturer sells the same number of machines to A, B, and C, it would have to charge a premium of $185 per machine to cover the risks assumed (($555,000 x .001)/3).

This premium would be clearly excessive in the case of A and B, resulting in either: (1) discontinuance of their use of a machine otherwise suitable for their businesses; or (2) burdening their businesses with costs associated with C's operations—reducing the attractiveness, in terms of price and quality, of the products they sell. C, in turn, is subsidized to the extent that A and B bear part of the costs of C's operations, which are highly sensitive to product failure.

One way of resolving the problem would be for the manufacturer to discriminate in price, charging A a $5 premium, B a $50 premium, and C a $500 premium (totaling the necessary $555). This approach, however, requires a degree of knowledge not available to manufacturers: information about the nature of each buyer's operations, not only at the time of sale, but subsequent to the sale (as long as the buyers do not change their operations so dramatically as to afford the manufacturer a defense of unforeseeability). Clearly the preferable solution, and the one most compatible with access to relevant information, is to have each buyer assume the risk of disruption of its own business and obtain insurance (or self-insure) against the risk. In effect, A would pay a premium to its own insurance company based on $5,000 per failure; B would pay a premium based on $50,000 per failure; and C would pay a premium based on $500,000 per failure.

If the UCC's allocation of risks is inefficient in many instances, is this a serious shortcoming in the Code? Not necessarily. It would be difficult to formulate a universally applicable repair-or-replace warranty—considering, among other things, the duration of the warranty.

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BUSINESS INTERRUPTION INSURANCE: ITS THEORY AND PRACTICE 73-76 (1986) (describing some of the risks against which insurance can be obtained).

189. See supra notes 75-76.
and the possible exclusions of particular risks from warranty coverage. Moreover, the UCC's formulation may be appropriate for isolated ad hoc transactions in which the parties do not explicitly address the question of risk allocation. By placing the major initial responsibility on sellers, the UCC provides an incentive for sellers to formulate more precise solutions, suitable to their particular needs, and to apprise buyers of the degree of warranty protection afforded. In effect, the UCC forces the seller's hand and compels the seller to devise warranty limitations that are efficient in the context of transactions between the seller and its customers.

B. Controlling the Incidence of Loss

The typical repair-or-replace warranty appears to be efficient from the perspective of optimal insurance, considering, inter alia, problems of moral hazard and adverse selection. But is this warranty efficient in reducing the risk of loss associated with product defects? Courts resistant to contractual reallocations of risk express concern about the erosion of "prophylactic principles of tort law" that provide incentives to produce safe products.190 The discussion thus far has maintained an attitude of agnosticism on whether the buyer or the seller is in the best position to avoid losses stemming from product defects.

As to the defect itself, control clearly rests with the seller. As to the consequences of the defect, the buyer exercises significant control, both in the manner in which the product is used and in precautions taken to avoid loss (such as periodic inspections and sensitivity to signs of trouble). In sum, the problem is one of joint care. In such cases, it is not possible to devise a liability rule that is optimal in all instances. For example, the diligence of the seller may be enhanced by increasing the probability that the seller will be held accountable for losses resulting from product defects. But the enhancement of seller diligence comes at the expense of buyer caution: The more probable it is that the seller will be held liable, the less care the buyer will take.

If, for example, a product defect will cause a loss of $100,000 and the probability of that loss can be reduced by one percent by a seller expenditure of $700, the expenditure, viewed in isolation, should be made (.01 \times $100,000 > $700). Similarly, if the consequences of product failure can be reduced by one percent by a buyer expenditure of $700, that expenditure, viewed in isolation, should also be made (an

190. See supra notes 144-48.
identical calculation). Whether it is efficient for **both parties** to make the precautionary expenditures depends on the interaction between the two efforts. If the combined effects of the efforts of the buyer and seller are largely redundant—achieving a gain of $1,000 at a cost of $1,400—the expenditure of one of the parties is a waste. Under such circumstances, only one of the parties should make the precautionary expenditure. If the efforts are substantially independent, each achieving a gain of $1,000 at a cost of $700, both expenditures should be made. In most cases, the combined effects will be somewhere between these two extremes. No rule of law can make the appropriate distinctions, at least not with any precision, because the relationship between the efforts of buyers and sellers is strongly influenced by factors that are specific to particular transactions.

This problem lends itself to a negotiated solution in which risks are allocated, each party assuming the responsibilities that are cost-effective in light of the responsibilities assumed by the other. More specifically, a seller offers a product accompanied by a warranty of particular scope at a certain price. A buyer can then seek to obtain more warranty protection (at a higher price) or less warranty protection (at a lower price) depending on whether the initial allocation assigned too little or too much responsibility to the seller. In making its determination, the buyer will consider: (1) the nature and magnitude of losses anticipated in the event of product failure; (2) the measures at the buyer's disposal to avoid or limit such losses; and (3) whether protection against such losses can be achieved more economically by negotiating a modification of the seller's warranty responsibilities (for example, by paying more to obtain additional protection).

At this point, an objection may be made that in most transactions no negotiation takes place. The buyer is confronted with a warranty term that is designed by the seller and tendered to the buyer on a take-it-or-leave-it basis. We now turn to instances in which negotiation of warranty terms is either unavailable or uninformed. Under such circumstances, can it be said that contractual allocations of risk are efficient and socially desirable?

**C. Objections to Contractual Allocations of Risk**

For present purposes, we assume that the contractual allocation

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of risk is not concealed, disguised, or misleading—that is, the parties are informed about the nature of the contractual provision. Under this assumption, two objections may be raised: (1) The contractual provision is not necessarily efficient because it is not freely selected in a competitive market, but is instead imposed by the unilateral action of a powerful seller dictating to a weak buyer; and (2) the contractual provision is not necessarily efficient because the parties (particularly the buyer) are not sufficiently apprised of the risks posed by product defects. We will consider each objection in turn and explore interactions between the two.

1. PROBLEMS OF MARKET POWER

We assume, initially, that the seller's market is competitive and that both parties are knowledgeable about the risks posed by defective products. If under these circumstances an improved warranty will cost sellers $100 per unit and yield benefits to buyers of $150 per unit, the improved warranty will be provided. If the improved warranty is presently being offered, a manufacturer withholding the warranty could offer a price reduction of $100. Knowledgeable buyers, however, would shun such a proposal because it offers a savings of $100 at a cost of $150. If the improved warranty is not presently being offered, an innovative producer could increase its market share or raise its price (or both) by offering the improved warranty. For example, an offer of the improved warranty at a price increase of $125 would be attractive to the innovator and to customers alike, each gaining $25 per unit over the existing regime. Emulation of the innovator will yield a market in which the improved warranty is offered at cost ($100 per unit), with customers reaping a net gain of $50 per unit over the prior price/product combination. In sum, efficient warranties will drive out inefficient warranties in markets characterized by competitive conditions and knowledgeable participants.

Does market power make a difference? Take the extreme case in which the seller is a monopolist (but retaining the premise that both parties are knowledgeable). Assume, once again, that the improved warranty costs the seller $100 per unit and provides buyers with benefits of $150 per unit. Assume further that the seller, a monopolist, has established a profit-maximizing price of $1,050 per unit. It would be in the interest of both parties to increase the price to $1,175 and to provide the improved warranty. Buyers would achieve a net gain of $25 per unit and, therefore, would not buy less. The monopolist would obtain $25 additional profit per unit and, in addition, would be able to sell additional units (the number depending on elasticity of
demand). Assume, for example, that the initial demand and cost schedule confronting the monopolist is as follows:

<table>
<thead>
<tr>
<th>Output</th>
<th>Price</th>
<th>Unit Cost</th>
<th>Unit Profit</th>
<th>Total Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5800</td>
<td>1,065.00</td>
<td>600</td>
<td>465.00</td>
<td>2,697,000</td>
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<tr>
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<td>600</td>
<td>435.00</td>
<td>2,697,200</td>
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<td>427.50</td>
<td>2,693,250</td>
</tr>
<tr>
<td>6400</td>
<td>1,020.00</td>
<td>600</td>
<td>420.00</td>
<td>2,688,000</td>
</tr>
<tr>
<td>6500</td>
<td>1,012.50</td>
<td>600</td>
<td>412.50</td>
<td>2,681,250</td>
</tr>
</tbody>
</table>

* Profit-maximizing price.

The addition of the improved warranty would increase cost by $100 per unit, but would increase demand at every point by $150. Thus:

<table>
<thead>
<tr>
<th>Output</th>
<th>Price</th>
<th>Unit Cost</th>
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<td>1,215.00</td>
<td>700</td>
<td>515.00</td>
<td>2,987,000</td>
</tr>
<tr>
<td>5900</td>
<td>1,207.50</td>
<td>700</td>
<td>507.50</td>
<td>2,994,250</td>
</tr>
<tr>
<td>6000</td>
<td>1,200.00</td>
<td>700</td>
<td>500.00</td>
<td>3,000,000</td>
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<tr>
<td>6100</td>
<td>1,192.50</td>
<td>700</td>
<td>492.50</td>
<td>3,004,250</td>
</tr>
<tr>
<td>6200</td>
<td>1,185.00</td>
<td>700</td>
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<td>3,007,000</td>
</tr>
<tr>
<td>6300</td>
<td>1,177.50*</td>
<td>700</td>
<td>477.50</td>
<td>3,008,250</td>
</tr>
<tr>
<td>6400</td>
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<td>700</td>
<td>470.00</td>
<td>3,008,000</td>
</tr>
<tr>
<td>6500</td>
<td>1,162.50</td>
<td>700</td>
<td>462.50</td>
<td>3,006,250</td>
</tr>
</tbody>
</table>

* Approximate profit-maximizing price.

At the new profit-maximizing price of $1,175 (derived by interpolation), output is 6337 units (an increase of 337 units) and total profits are $3,010,075 (an increase of $310,075). At the same time, the value of the product to the buyer is increased by $25—the old price ($1,050) plus the value of the improved warranty ($150) minus the new price ($1,175).

The same reasoning applies to markets that are imperfectly competitive, but not fully monopolized: (1) markets characterized by product differentiation in which each producer has some discretion over price because of the distinctiveness of its product; and (2) markets characterized by small numbers of producers engaged in nonrivalrous behavior (including instances of overt and tacit collusion).

In the case of product differentiation, each producer is a limited monopolist. Within the bounds set by imperfect substitutes, a producer can raise its price without losing all patronage and can lower its price without necessarily triggering responses by rivals. The demand curve faced by each producer is the same as the demand curve faced
by a true monopolist, except that the elasticity of demand is much
greater: relatively small changes in price will induce relatively large
changes in output as buyers turn to imperfect substitutes. The differ-
ence, however, is of no significance. A monopolist, whether facing a
demand curve of high or low elasticity, can achieve higher profits
(and increased output) by offering optimal warranty protection. The
analysis of the monopoly case is not dependent on the elasticity of
demand confronting the monopolist and is fully applicable to
instances of imperfect competition premised on product
differentiation.192

As to firms acting in concert, whether overtly or tacitly, the
starting point is again the monopoly model. Taking the example pre-
viously stated, assume that there are now three firms: each sells 2,000
units of output at a price of $1,050 and a cost of $600; and each
receives a $900,000 share in monopoly profits ($2,700,000 ÷ 3). It
would be in the interest of all three participants to move to an
improved warranty at a price of $1,175 and a cost of $750. Total
output would increase by 337 units, presumably shared pro rata, and

\[\text{Output} \quad \text{Price} \quad \text{Unit Cost} \quad \text{Unit Profit} \quad \text{Total Profit} \]
\[
\begin{array}{cccc}
4,750 & 705 & 600 & 105 & 498,750 \\
5,000 & 700* & 600 & 100 & 500,000 \\
5,250 & 695 & 600 & 95 & 498,750 \\
5,500 & 690 & 600 & 90 & 495,000 \\
5,750 & 685 & 600 & 85 & 488,750 \\
6,000 & 680 & 600 & 80 & 480,000 \\
6,250 & 675 & 600 & 75 & 468,750 \\
6,500 & 670 & 600 & 70 & 455,000 \\
\end{array}
\]

* Profit-maximizing price.

If an improved warranty increases cost by $100 and demand by $150, the new situation facing
the producer is:

\[\text{Output} \quad \text{Price} \quad \text{Unit Cost} \quad \text{Unit Profit} \quad \text{Total Profit} \]
\[
\begin{array}{cccc}
4,750 & 855 & 700 & 155 & 736,250 \\
5,000 & 850 & 700 & 150 & 750,000 \\
5,250 & 845 & 700 & 145 & 761,250 \\
5,500 & 840 & 700 & 140 & 770,700 \\
5,750 & 835 & 700 & 135 & 776,250 \\
6,000 & 830 & 700 & 130 & 780,000 \\
6,250 & 825* & 700 & 125 & 781,250 \\
6,500 & 820 & 700 & 120 & 780,000 \\
\end{array}
\]

* Profit-maximizing price.

Accordingly, the adoption of the improved warranty enables the producer to increase output
from 5,000 units to 6,250 units and to increase its profit from $500,000 to $781,250.

For a discussion of the similarity between pricing decisions under conditions of monopoly
and under conditions of product differentiation, see F. Scherer, INDUSTRIAL MARKET
STRUCTURE AND ECONOMIC PERFORMANCE 15-16, 385 (2d ed. 1980). For a discussion of the
economics of product differentiation, see id. at 384-405.

192. Consider a monopolist (or producer of a differentiated product) facing an elastic
demand curve:
each firm would increase its pro rata share of industry profit from $900,000 to $1,003,358. Just as a monopolist would find it advantageous to give an improved warranty, the firms comprising a shared monopoly would find it advantageous to do so. The improved warranty would increase the industry profit to be shared among the sellers, thereby increasing their individual shares.\(^{193}\)

The need for concerted action is not an impediment. Once the

\[
\begin{array}{cccc}
\text{Output} & \text{Price} & \text{Unit Cost} & \text{Unit Profit} & \text{Total Profit} \\
2,320 & 1,065.00 & 600 & 465.00 & 1,078,800 \\
2,360 & 1,057.50 & 600 & 457.50 & 1,079,700 \\
2,400 & 1,050.00^* & 600 & 450.00 & 1,080,000 \\
2,440 & 1,042.50 & 600 & 442.50 & 1,079,700 \\
2,480 & 1,035.00 & 600 & 435.00 & 1,078,800 \\
2,520 & 1,027.50 & 600 & 427.50 & 1,077,300 \\
2,560 & 1,020.50 & 600 & 420.00 & 1,075,200 \\
2,600 & 1,012.50 & 600 & 412.50 & 1,072,500 \\
\end{array}
\]

\* Profit-maximizing price.

If an improved warranty increases cost by $100 and demand by $150, the new situation facing the industry leader, assuming a continued 40% market share, is:

\[
\begin{array}{cccc}
\text{Output} & \text{Price} & \text{Unit Cost} & \text{Unit Profit} & \text{Total Profit} \\
2,320 & 1,215.00 & 700 & 515.00 & 1,194,800 \\
2,360 & 1,207.50 & 700 & 507.50 & 1,197,700 \\
2,400 & 1,200.00 & 700 & 500.00 & 1,200,000 \\
2,440 & 1,192.50 & 700 & 492.50 & 1,201,700 \\
2,480 & 1,185.00 & 700 & 485.00 & 1,202,800 \\
2,520 & 1,177.50^* & 700 & 477.50 & 1,203,300 \\
2,560 & 1,170.00 & 700 & 470.00 & 1,203,200 \\
2,600 & 1,162.50 & 700 & 462.50 & 1,202,500 \\
\end{array}
\]

\* Approximate profit-maximizing price.

At the new profit-maximizing price of $1,175 (arrived at by interpolation), output is 2,535 units (an increase of 135 units) and firm profits are $1,204,125 (an increase of $124,125). The industry leader would adopt a profit-maximizing price and corresponding warranty because it is in that firm's interest to do so; the other sellers must follow suit or offer an inferior combination and lose market share. Other sellers would not quote a lower price or offer a superior warranty because, by hypothesis, they are less efficient than the industry leader. With their higher costs, these other sellers would prefer a higher price than the one selected by the leader, but they are constrained by the price decision of the leader; they could quote a lower price, but only by sacrificing profits to no avail.

It is not necessary that the industry leader act as innovator in this sequence of events. The economic reasoning does not depend on the market share of the innovating firm. Yet, only the leading firm (assumed to be the most efficient) can compel others to follow its lead. An inefficient innovator can be undercut by a more efficient firm, and it might be reluctant to initiate changes that could lead to intensified rivalry. Even so, the improved warranty serves the interests of all producers, and in a context of knowledgeable firms, the innovator would expect emulation with respect to the improved warranty. For a discussion on the dynamics of oligopoly pricing, see F. Scherer, supra note 192 at 156-58.
virtue of an improved warranty is perceived by any one of the three producers, that producer will offer the warranty and make the appropriate price change. In a context of knowledgeable sellers and buyers, the change will be made by the other producers as well. If they failed to do so, they would be offering an inferior product (all things considered), and knowledgeable buyers would shun that product.

Accordingly, as long as all market participants are knowledgeable, there is no reason to object to risk allocation provisions imposed by monopolists or others possessing lesser degrees of market power. The dominant seller has a strong incentive to develop an efficient provision, and both buyer and seller share in the resulting gain.194

2. PROBLEMS OF IGNORANCE

There are three types of ignorance that need to be considered: (a) buyer ignorance; (b) seller ignorance; and (c) universal ignorance (neither party knowledgeable).

a. Buyer Ignorance

Assume, as before, that an improved warranty costs sellers $100 per unit and yields benefits of $150 per unit for buyers. If buyers are ignorant, they might resist the new warranty because they prefer a cost saving of $100 (or less) to a warranty with unrecognized benefits of $150. This configuration has posed major problems in analyses of consumer markets,195 but it is not a significant problem if buyers are commercial enterprises.

i. Competitive Markets

If buyers and sellers operate in competitive markets, buyer ignorance must be massive to prevent the introduction of the improved warranty. If one or more buyers are enlightened enough to seek an improved warranty, the following consequences ensue (assuming the


195. See Schwartz & Wilde, Imperfect Information in Markets for Contract Terms: The Examples of Warranties and Security Interests, 69 VA. L. REV. 1387, 1425-50 (1983); Spence, Consumer Misperceptions, Product Failure and Producer Liability, 44 REV. ECON. STUD. 561, 562-64 (1977); Note, Imperfect Information, the Pricing Mechanism, and Products Liability, 88 COLUM. L. REV. 1057, 1059-60 (1988). Shavell makes this same point, but he fails to limit his observation to consumer transactions; yet, the discussion makes clear that consumer cases are the focus of attention. S. SHAVELL, supra note 81, at 61-62.
improved warranty is priced at $125 per unit): Enlightened buyers now have an advantage of $25 per unit over ignorant buyers, and those who sell to enlightened buyers have an advantage of $25 per unit over those who sell to ignorant buyers. This is hardly a stable situation. Enlightened buyers will gain in their resale markets at the expense of ignorant buyers, and those who sell to enlightened buyers will gain at the expense of those who sell to ignorant buyers. Ignorance imposes penalties on buyers (as well as on those who sell to such buyers), and such penalties are a threat to survival in competitive markets. Ignorant buyers would be under great pressure to follow in the footsteps of their enlightened rivals, and those who sell to such buyers would have strong incentives to assist in their enlightenment. 196

Product differentiation does not change the underlying analysis. Buyers might be ignorant, not only of the benefits of the improved warranty, but of other features of differentiated products in competition with one another. The burdens of buyer ignorance and the difficulties of seller enlightenment are increased if multiple product features must be compared. But in the end, buyers must meet the test of competition in their resale markets. Buyers choosing the best product (price, warranty, and other features considered) will succeed at the expense of rivals making less wise choices; purchasers of inferior products (price, warranty and other features considered) will find themselves threatened in their resale markets. These purchasers (and their suppliers) will be subjected to market pressures to achieve improved price/product combinations, including improved warranty protection when justified by a comparison of costs and benefits.

It might be argued that product development could proceed at a pace so rapid as to preclude market evaluation and acceptance of a superior price/product combination. Assume, as before, that an improvement yielding benefits of $150 is priced at $125 and that ignorant buyers shun the new offering in the mistaken belief that the improvement is not worth the higher price. If the improvement is then superseded by further product developments in a relatively short time, the interval might not be long enough to permit completion of the process of learning and adaptation leading to the domination of the superior price/product combination over inferior price/product

196. One perverse impact may be the attraction of poorly-situated buyers ("lemons") by sellers making more expansive warranties. This problem of adverse selection, however, assumes buyer knowledge. If poorly situated buyers know wherein their interests lie, better situated buyers may be at least as well informed. Moreover, sellers can anticipate, or react to, adverse selection by buyers, and write their warranties so as to minimize or preclude such buyer behavior.
combinations. Anticipating such a rapid succession of products, a producer might choose not to offer the improvement for fear that the expected life of the product would be insufficient to permit a level of market acceptance necessary to make the strategy of innovation a profitable one.

This is a serious problem in the case of improvements involving changes in the physical characteristics of the product. But the concern about potentially short product life is largely inapplicable to decision-making about improved warranties applicable to particular products. A producer incurs very little cost, and runs almost no risk, in introducing an improved warranty. Unlike changes in the physical characteristics of the product, which almost invariably involve a substitution of the new product for the old, the introduction of a new warranty need not exclude the old one. The producer can offer the old (inferior) warranty at the old price and the new (improved) warranty at the appropriate price increment ($125 in the example given). If buyers respond favorably within the effective life of the product, the improved warranty will gain acceptance in the market. If the product life proves too short to permit such acceptance, the producer incurs a negligible loss (and probably realizes some gain) and buyers who choose the improved warranty clearly derive a benefit. In sum, the producer has everything to gain, and almost nothing to lose, in adopting improved warranties—even in dynamic markets in which the life cycle of the product might be relatively short. For any given product, improved warranties will be offered to buyers whenever a producer perceives that they confer a benefit on the parties in excess of anticipated costs.

ii. Monopolistic Markets

If the seller is an enlightened monopolist, the result is the same—the improved warranty will be provided. Assume, as before, that the initial profit-maximizing price (without the improved warranty) is $1,050. Under the assumptions previously made, the monopolist would impose the improved warranty at a price of $1,175. (At worst, assuming extreme inelasticity of demand, the monopolist would not charge more than $1,200.) At any price below $1,200, the monopolist has the power to ram the improved warranty down the throats of unwilling buyers. The buyers have nowhere else to go; moreover,

198. Implicit in this observation is the assumption that those who buy from a monopolist,
they will not be driven out of business nor constrained to buy less product because, whatever their original ignorance, buyers will find that the benefits of the new warranty exceed its costs (by $25 under the assumptions previously made). As long as the monopolist is knowledgeable, both parties will be better off under the improved warranty; warranty responsibility will be efficiently distributed.199

Buyer ignorance is a problem only if the buyer is a monopolist in the market in which it engages in resale activity200 and the seller is not a monopolist and cannot unilaterally impose the improved warranty on the buyer. Because the buyer is not subject to competition in its own sales, it cannot be compelled by market pressure to accept the improved warranty; in fact, it might persist in refusing to do so. It should be emphasized that it is contrary to the self-interest of the buyer-monopolist to refuse the improved warranty and to forego the opportunity to reduce the net costs of its operations. A reduction in the costs of a monopolist enables it to reduce price, increase output, and increase profits (assuming a constant demand).201 This is an example of a “slothful monopolist”—one that engages in inefficient operations but is not subject to market correction as long as its monopoly position is maintained. Nonetheless, because it is in the self-interest of the buyer-monopolist to accept the improved warranty, and because sellers have an interest in achieving the same result, there is good reason to expect that the forces of enlightenment will prevail.

199. There are two variations on the monopoly theme. First, the monopolist may be facing a highly elastic demand curve. Purchasers might switch to other products rather than pay a higher price for the monopolist’s product with the improved warranty. This problem of the “weak monopolist” is indistinguishable from the problem of product differentiation. As previously indicated, purchasers achieving the best price/product combination will succeed at the expense of their rivals in resale markets, putting pressure on these rivals to patronize the “weak monopolist” and to accept the improved warranty if that is in fact the best price/product combination available. See supra text following note 196. Only ignorance of market-wide dimensions would preclude such an outcome.

Second, monopoly power may be exercised by several firms acting in concert. This poses no distinctive problems. If the leading firm is knowledgeable, it will adopt and impose on its rivals the most efficient warranty term. See supra note 193.

200. “Resale activity” is intended to encompass not only situations in which the buyer incorporates the seller’s product in the buyer’s product, but also situations in which the seller’s product is used by the buyer to provide a commercial service.

201. Assume that the buyer is a profit-maximizing monopolist with an output of 6,000 units, a price of $1,050 per unit, a unit cost of $600, and a total profit of $2,700,000. See supra Section IV(C)(1). Assuming the demand schedule there described and a cost reduction of $50 per unit, the results are as follows:
b. Seller Ignorance

If sellers are ignorant of the advantages of offering an improved warranty, none will do so. In competitive markets, however, this ignorance must be massive in order to pose an impediment. Once a competitor recognizes the advantages, it will become an innovator and offer the improved warranty to knowledgeable buyers. To return to the original example, the innovating seller can offer an improved warranty for $125, providing benefits of $25 to its buyers (the warranty's benefits are worth $150) and benefits of $25 to itself (the cost of the warranty is $100). Other sellers must emulate the innovating seller or lose market share. The process can also be triggered by the entry of an enlightened seller or by the initiative of an enlightened buyer, who offers a "bribe" of $125 to an ignorant seller and explains the mutual advantages of the improved warranty. It is doubtful that massive ignorance among sellers will persist for a prolonged period of time in competitive markets.

Product differentiation presents no distinctive problems. Seller ignorance, whether about one or more product features, will be penalized if buyers are knowledgeable.

If the seller is a monopolist, we are confronted once again with the problem of the "slothful monopolist"—a firm that, because of ignorance or indifference, refuses to introduce an improved warranty that would prove beneficial both to itself and to its customers. (Under assumptions previously made, a monopolist could increase profits from $2,700,000 to $3,010,075 by introducing the improved warranty.) There is no simple solution to this problem except the hope of eventual enlightenment—the monopolist awakens, an enlightened firm enters, or the monopolist responds to the proposals of customers (presumably, a powerful customer could insist on an improved war-

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<td>3,006,250</td>
</tr>
</tbody>
</table>

* Approximate profit-maximizing price.

At the new profit-maximizing price of $1,025 (arrived at by interpolation), output is 6,337 units (an increase of 337 units), and total profits are $3,010,075 (an increase of $310,075).

Even a monopolist will profit from attaining the lowest net costs of operation. See F. Scherer, supra note 192, at 15-16.
ranty).\textsuperscript{202} The problem of the slothful monopolist cannot readily be solved in any other manner. This is one of the reasons monopolies are opposed as a matter of public policy. The important thing to recognize is that this is not a problem unique to warranties; the ignorant monopolist may produce the wrong goods, charge the wrong price, use the wrong production techniques, or make any number of errors. The solution is to encourage new entry and to provide competition at the monopolist's level. One redeeming feature of this general configuration is that the more slothful the monopolist, the greater the inducement to new entry. (Of course, if the monopolist is regulated, the regulatory agency can regulate warranty matters along with any other aspects of price and service.)

c. Universal Ignorance

If neither buyers nor sellers are knowledgeable about the advantages of an improved warranty, the warranty will not be offered. Nonetheless, it is difficult to fashion a response to this phenomenon because it is hard to imagine that courts or legislatures will be more enlightened about optimal warranty provisions than competitors, customers, and prospective entrants, all of which focus their energies and risk their fortunes in the market.\textsuperscript{203} This scenario is impervious to solution, either public or private, but it is also unlikely to occur in any form other than as an innovation waiting to be discovered.

3. SUMMARY

Contractual allocations of risk between commercial entities are not rendered inefficient because of disparities in bargaining power. In

\textsuperscript{202} Resistance to change may be aggravated if monopoly power is shared rather than exercised by a single firm. If collusion is overt, there are no additional problems; once the efficient warranty is identified, all firms would agree to adopt it in order to increase aggregate monopoly profits and thereby increase each firm's respective share. But if the firms are pursuing a course of tacit collusion with no explicit communications among them, it is conceivable that an improved warranty could be withheld—even after its beneficial features are recognized by one of the firms participating in the tacit collusion—if variation of product features (including warranty terms) poses a threat to industry-wide adherence to a supracompetitive price. A concern for consensus could therefore delay introduction of an improved warranty. Nonetheless, a number of conditions must be met in order for this impact to be felt, including disparity in the knowledge of the colluding firms and a general fear of the breakdown of consensus pricing. In any case, the industry leader would not be deterred by such considerations because it can impose its price/product combination on its rivals. See supra note 193.

\textsuperscript{203} It is perhaps plausible that a specialized regulatory agency might devise a solution more efficient than any prevailing in the market. Even this contingency seems remote, but in any case the outcome is not troublesome. Market participants have strong incentives to adopt superior solutions, and the non-coercive provision of information by an agency would achieve appropriately efficient results.
this context, warranty practices are very likely to be efficient whether they are individually negotiated between parties of equal bargaining power or unilaterally imposed by a monopolist or other powerful seller.

Either buyers or sellers may lack knowledge of pertinent risks, and thus fail to appreciate the benefits of an efficient warranty arrangement. But this is not likely to pose a problem if: (1) the buyer's market and the seller's market are both competitive; (2) the seller's market is monopolistic and the seller is knowledgeable; or (3) the buyer's market and the seller's market are both monopolistic and at least one participant is knowledgeable. Ignorance poses a problem in only two cases: both buyers and sellers are ignorant (universal ignorance); or one of the market participants (either seller or buyer) is a "slothful monopolist" and the other participant lacks market power. The first case is unlikely to yield to any solution, either public or private. The second is more properly viewed as a monopoly problem rather than a warranty problem, but even here, the prospects for eventual enlightenment seem promising.

In sum, there are no substantial reasons—whether grounded in concerns over market power or over the ignorance of market participants—for refusing to enforce contractual allocations of risk in sales transactions between commercial entities. To the contrary, there is every reason to expect that market participants will be better informed and more highly motivated than any government agency in efforts to identify and adopt efficient warranty terms.

D. Fraud, Concealment, and Sharp Practices

While legislatures and courts are not well suited to determine whether particular warranty provisions are sound or unsound, it is possible to generalize about contracting practices. Fraud, for example, has no redeeming virtues. Resources are consumed in the creation of fraudulent schemes and in the development of measures to protect against them. Society would be better off with no fraud at all, and it is appropriate to react forcefully to fraud. The only restraining influences are: (1) adjudication costs incurred in proving fraud; and (2) possible errors in finding fraud where none exists, thereby undermining legitimate transactions. courts appear to adopt the appropriate attitude: require clear proof of fraud, but then attack fraud with vigor.205

Absent blatant fraud, there is still the problem of unwitting deception or hard-to-prove fraud, the probability of which are enhanced by buyer ignorance of contract provisions adverse to their interests. The requirement of mandatory disclosure, along the lines suggested by the UCC, is a cheap remedy, and, with modest revisions, it could be made more efficacious. For example, the requirement of conspicuousness should apply to every limitation of liability, whether it takes the form of warranty disclaimer, liquidated damages, other limitation on remedy, or other term affecting redress (such as shortened inspection, notice, or claim periods). In applying the UCC, courts generally have been sensitive to such considerations, but standards could be codified with a view to reducing costs associated with uncertainty. Even so, it is appropriate for the courts to continue to police those merchants who are willing to sacrifice honor for profit. Like fraud, sharp business practices have no redeeming virtues, but policing such practices might require greater flexibility and broader tolerance due to practical constraints.\textsuperscript{206}

V. THE DOMAIN OF CONTRACT: THE PROBLEM OF THE INDIRECT BUYER

The discussion thus far has proceeded on the assumption that only two parties are involved: a seller who deals directly with a buyer of an end product. In fact, most of the transactions in the world of commerce, as well as most of the litigated cases, are not so simple. Intermediaries are involved more often than not. The most common phenomenon is the "chain of distribution": a Ford truck, for example, is purchased from a Ford dealer rather than from the Ford Motor


\textsuperscript{206} For example, in Industralease Automated & Scientific Equipment Corp. v. R.M.E. Enterprise, 58 A.D.2d 482, 396 N.Y.S.2d 427 (1977), RME leased an incinerator from Industralease but refused to make payments when the incinerator proved to be inoperable. \textit{Id.} at 428-29. The court treated the transaction as a sale under the UCC and absolved RME of liability. \textit{Id.} at 430-32. There had been a disclaimer of warranties in the lease, but the court held the disclaimer to be unconscionable. \textit{Id.} at 432. A last-minute substitution of a revised lease, occurring in an atmosphere of haste and pressure, had eliminated warranties appearing in the original lease. \textit{Id.} at 428. Further, it was clear that RME had relied on the expertise of Industralease. \textit{Id.} at 432.
Company. Other cases involve the incorporation of components into a finished product. If Ford includes a Clark transmission in a Ford truck and the transmission proves to be defective, may the buyer sue Clark as well as Ford? Still other cases involve purchases of used or rehabilitated products from persons other than their initial owners. If a product proves to be defective and the defect can be traced to the original manufacturer, may the buyer of the used product sue the original manufacturer?

Absent direct dealings between the parties, it is tempting to turn to the law of torts for answers to these issues. But tort doctrine is not the most germane body of law. The underlying issues are the same in these "nonprivity" cases as in cases in which the parties deal directly with one another. Contract law therefore provides the most satisfactory basis for analysis. Yet, the development of an appropriate legal framework is a complex undertaking.207

A. Doing Business on the Contract-Tort Interface

If a supplier makes representations concerning its product—in advertising, labeling, or trade literature—a remote purchaser may rely upon those representations and seek to recover for product defects on a theory of misrepresentation or breach of express warranty. In such cases, the absence of privity is unlikely to protect the supplier.208 Similarly, the supplier will not be permitted to rely upon limitations on liability included in contracts between the supplier and its immediate

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purchasers (the intermediaries through which the product finds its way into the hands of a dissatisfied plaintiff). In *Randy Knitwear, Inc. v. American Cyanamid Co.*, for example, American Cyanamid was held accountable for representations of the shrink-resistant quality of its resins; the representations accompanied the resins as they passed through the hands of intermediaries. In such circumstances, what measures are available to protect the supplier if it seeks to limit liability?

First, the supplier can accompany its representations with appropriate qualifications. Advertisements or brochures might advise that "warranty limitations apply," further referring to the warranty statement of the manufacturer. If purchasers are on notice that their rights are qualified, there is less difficulty in holding them to limitations that are spelled out in the manufacturer's warranty statement. Second, the supplier can insist that its distributors and dealers include the manufacturer's warranty statement, including all pertinent limitations and exclusions, in their sales contracts. Properly coordinated, these steps should permit the remote vendor to impose the same limitations on ultimate purchasers as it would impose if it were dealing with them directly. Absent such measures, there are the twin risks: (1) that the unqualified representation will be treated as an express warranty, not subject to disclaimer under the UCC; and (2) that some purchasers will see or hear the unqualified representation and not be apprised in a timely manner of the manufacturer's warranty limitations. Unqualified statements may also give rise to claims based on misrepresentation.

These steps are required, not only in "chain of distribution" cases, but also in cases in which brand name articles are included in other products. If General Electric promotes the use of control systems employed in industrial machines manufactured by others, it can be held accountable for misrepresentation or breach of express warranty.

Ohio 1983) (Wisconsin law) (requiring privity for express as well as for implied warranty claims).


209. 11 N.Y.2d 5, 181 N.E.2d 399, 226 N.Y.S.2d 363 (1962); see *supra* notes 158-63.
211. See *supra* note 43.
212. See *supra* note 38.
213. See *supra* notes 155-83.
warranty unless (1) the representations are qualified or (2) the manufacturer of the finished product includes in the contract of sale either a separate warranty statement of GE or a statement expressly assuming all responsibility for the finished product and expressly absolving GE.

In the absence of representations, suppliers may be liable for negligence, strict product liability, or breach of implied warranty. The absence of privity precludes actions on implied warranties in many states. But an increasing number of states dispense with the requirement of privity in most, if not all, actions on implied warranties—including suits to recover damages for commercial loss. The


"economic loss" doctrine precludes liability in tort in many instances. But the effectiveness of this bar depends on the nature of the loss sustained by the remote purchaser and on the legal theory advanced in seeking recovery: Injuries to tangible property will be redressed in circumstances in which intangible business losses are not compensated; and negligence claims are likely to succeed in some states even if strict liability is not accepted as a basis for the recoupment of economic losses. Where a tort claim can be asserted—as it can in many circumstances—a disclaimer or limitation of liability by the supplier may be exceedingly difficult to enforce against a remote purchaser.

The optimal transactional mode includes: (1) a sale by the supplier to the intermediary, disclaiming warranties and otherwise limiting the liability of the supplier to the extent it considers appropriate; (2) an agreement by the intermediary to convey the supplier's limitations to the ultimate purchaser, expressly naming the supplier as a third-party beneficiary of the intermediary-purchaser contract; and (3) inclusion of express terms limiting the supplier's liability (in war-

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216. See supra notes 120-30.
ranty, negligence, and strict liability) in the intermediary’s sales contract with the ultimate purchaser.\textsuperscript{217}

These arrangements should be efficacious in component cases as well as in "chain of distribution" cases. In the case of unbranded components, an argument can be made that the ultimate purchaser should be confined to claims against its immediate vendor, without regard to the presence or absence of special agreements, because the purchaser has no basis, ex ante, to look beyond its immediate supplier for fulfillment of its expectations concerning all aspects of the finished product.\textsuperscript{218} Nonetheless, in view of the complexities of modern products liability law, precautionary measures are advisable.

Litigation on these points is not extensive, but the cases support the analysis adopted. In \textit{Aeronaves de Mexico, S.A. v. McDonnell Douglas Corp.},\textsuperscript{219} Aeromexico acquired an aircraft manufactured by McDonnell Douglas, and brought an action against McDonnell Douglas when the landing gear failed and the aircraft was damaged.\textsuperscript{220} An exculpatory clause protected McDonnell Douglas against a negligence claim by Aeromexico.\textsuperscript{221} The clause was also held to protect two suppliers who designed and manufactured the landing gear for McDonnell Douglas.\textsuperscript{222} One of these suppliers, Menasco, could file a third-party claim against McDonnell Douglas if Menasco were found liable to Aeromexico; the court ruled that the allowance of a suit against Menasco would deny McDonnell Douglas the benefit of its bargain with Aeromexico as to risk allocation, thereby conferring a windfall on Aeromexico.\textsuperscript{223} As to the other supplier, Cleveland Pneumatic, the McDonnell Douglas sales contract provided warranty protection under the McDonnell Douglas warranty in exchange for the buyer’s acceptance of the remote supplier’s disclaimer of liabil-

\textsuperscript{217} See infra notes 219-35 & 250-58.
\textsuperscript{218} Absent representations by the component supplier, there can be no claim based on express warranty or misrepresentation; if the parties have no contact with one another, it is unlikely that a misrepresentation claim could be premised on a mere failure to disclose. Moreover, if the component supplier is not identified, neither of the implied warranty theories are applicable. See supra notes 16-18. For reasons previously discussed, supra notes 131-53, liability in negligence and in strict product liability should be rejected.
\textsuperscript{219} 677 F.2d 771 (9th Cir. 1982) (California law). The details of the transaction in this case were more complex. McDonnell Douglas Co. (MDC) sold the aircraft to McDonnell Douglas Finance Corp. (MDFC), which assigned its rights to National Aircraft Leasing (NAL), which in turn leased the aircraft to Aeromexico (AM). \textit{Id.} at 772. The terms of the MDC-MDFC contract, including the warranty provisions, were negotiated by MDC and AM. \textit{Id.} at 773. AM accepted an assignment of the provisions and became bound by their terms. \textit{Id.}; see U.C.C. § 2-210(4) (1987).
\textsuperscript{220} 677 F.2d at 772.
\textsuperscript{221} \textit{Id.} at 773.
\textsuperscript{222} \textit{Id.}
\textsuperscript{223} \textit{Id.}
Accordingly, Aeromexico was barred from suing either supplier. Other courts have rejected similar suits against suppliers of components, relying on the implications of the risk allocation provisions of sales contracts between manufacturers of finished products and ultimate purchasers.

There are, however, some cases that have reached a contrary result. In *Peterson v. North American Plant Breeders*, for example, Peterson purchased seed corn, produced by North American, from one of North American's dealers. When the seed corn proved defective, Peterson sued North American for breach of warranty and was granted relief. In response to North American's argument that the court's ruling would make North American an insurer of farmers' crops, the court replied that "there is no reason that [North American] cannot disclaim its warranty liability by policing its dealers and making sure that its disclaimer reaches the ultimate user of its product during the negotiations for the product's sale." Similarly, in *Clark v. DeLaval Separator Corp.*, a dairy operator sued a manufacturer of milking machines for breach of implied warranty. The machines, which bore the manufacturer's brand name, were purchased from an intermediary who had disclaimed liability. The disclaimer was held not to benefit the manufacturer because it was not sufficiently explicit; the court concluded that to hold otherwise would subject the purchaser to unfair surprise. The court observed that the manufacturer could protect itself by disclaiming warranties in materials included with the goods; by joining with the retailer in the

224. Id. at 774.
227. Id. at 259-60, 354 N.W.2d at 628.
228. Id. at 270, 354 N.W.2d at 634.
229. Id. at 266, 354 N.W.2d at 632; see *Hunter v. Texas Instruments, Inc.*, 798 F.2d 299 (8th Cir. 1986) (Arkansas law) (manufacturer protected by provision in dealer-buyer contract).
230. 639 F.2d 1320 (5th Cir. 1981) (Texas law).
231. Id. at 1322.
232. Id. at 1321-23.
233. Id. at 1323.
234. Id. at 1324.
latter's disclaimer on sale to the ultimate purchaser; or by being named in the retailer's contract as a third-party beneficiary of the warranty disclaimer.\textsuperscript{235} The Peterson and Clark cases are significant for their emphasis on bringing home to the ultimate purchaser with the warranty limitations of a manufacturer of a brand-name product.

A particularly troublesome case is John R. Dudley Construction, Inc. v. Drott Manufacturing Co.\textsuperscript{236} Dudley purchased a used crane, "as is," from Case Credit.\textsuperscript{237} Because of defective bolts, the crane collapsed and caused extensive damage to itself but no injury to any person or to other property.\textsuperscript{238} The court permitted Dudley to proceed against Drott, the manufacturer of the crane, in strict product liability; the court reasoned that the crane, in its defective condition, posed an unreasonable risk of harm to persons and property.\textsuperscript{239} The court refused to permit Drott to rely on the "as is" provision in the Case Credit sales transaction because there was no indication that Drott was an intended beneficiary of that contract\textsuperscript{240} and there was no showing that the clause was "intended to exclude a claim of physical damage to the product under the strict products liability theory."\textsuperscript{241}

It would be difficult to find a case more perverse than Dudley.\textsuperscript{242} By invoking tort law, the buyer of a used product, purporting to assume the risks of the product's deficiencies under an "as is" warranty disclaimer, is permitted to transfer those risks to a remote manufacturer.

Other courts have been more sympathetic to the plight of the

\begin{itemize}
  \item \textsuperscript{236} 66 A.D.2d 368, 412 N.Y.S.2d 512 (Sup. Ct. 1979).
  \item \textsuperscript{237} \textit{Id.} at 370, 412 N.Y.S.2d at 513.
  \item \textsuperscript{238} \textit{Id.}
  \item \textsuperscript{239} \textit{Id.} at 375, 412 N.Y.S.2d at 516.
  \item \textsuperscript{240} \textit{Id.}
  \item \textsuperscript{241} \textit{Id.}
\end{itemize}
manufacturer. In *Datamatic, Inc. v. International Business Machines Corp.*243 ITEL purchased used IBM computers from various sources, assembled them into systems, and sold them under contracts disclaiming all warranties and assigning to its purchasers any rights under the manufacturer’s warranties.244 IBM’s original sales contracts included repair-or-replace warranties which excluded consequential damages.245 Datamatic purchased a computer system from ITEL and, claiming a manufacturing defect, sued IBM for breach of implied warranty, seeking a return of the purchase price, lost profits, and other damages.246 IBM relied on its warranty limitations and alleged that the rights of Datamatic were limited to those of the original purchaser.247 The court held that Datamatic was subject to IBM’s warranty limitations because Datamatic’s contract with ITEL indicated that “there might be limited manufacturer’s warranties.”248

More broadly, the court ruled that Datamatic acquired only the limited warranties possessed by its predecessors in title when it signed the purchase agreement with ITEL. . . . To allow Datamatic to pursue unlimited rights against IBM would render limited warranties almost meaningless to a manufacturer . . . . Subsequent purchasers . . . should bear the responsibility of checking what rights they are acquiring against the manufacturer rather than requiring manufacturers to track down all subsequent purchasers of their products.249

The outcome was adverse to the manufacturer in *Patty Precision Products Co. v. Browne & Sharpe Manufacturing Co.*,250 but a concur-
ring opinion made a meaningful contribution to the dialogue. Patty Precision purchased machines from Browne & Sharpe, a manufacturer which had incorporated in its machines a component originating with General Electric. The component had been purchased from GE subject to a limited warranty. Patty Precision sued Browne & Sharpe, GE, and others for breach of implied warranty. The court refused to permit GE to rely on the warranty limitations in its contract of sale to Browne & Sharpe on the ground that these limitations had never been communicated to Patty Precision. A concurring opinion found that GE was estopped from relying on the warranty limitations because, in its direct dealing with Patty Precision (repairing the component), GE had never disclosed the limitations. Nonetheless, the concurrence made these points: (1) when "the first buyer adds, assembles or incorporates the manufacturer's product into another item or when the first buyer modifies or uses the manufacturer's product before resale," limitations of liability and disclaimers of warranty are binding on subsequent buyers; and (2) when the intermediary is a dealer, any disclaimers or limitations must be communicated to the ultimate consumer. The basis for the distinction is that the "typical component part manufacturer will be selling to a larger entity which it cannot reasonably be expected to control. In contrast, the problem of notice is less severe [with distributors]; the manufacturer frequently can notify the ultimate purchaser simply by affixing a copy of the disclaimer to the product."

B. A Proposed Resolution

There is substantial disarray in warranty law, complicated by the economic loss problem in tort law, concerning the status of the non-privity buyer. In both instances, the impetus for restricting liability appears to be the courts' concern with subjecting the manufacturer to liability that is both excessive in scope and difficult to bound by contract or other means. The judicial responses to date, while generally consistent with the analysis of the preceding Section, have nonetheless

251. Id. at 1248.
252. Id.
253. Id. at 1248-49.
254. Id. at 1248.
255. Id. at 1252-54.
256. Id. at 1256 (Logan, J., concurring). The concurrence found that GE's direct dealings with Patty Precision, without disclosure of the warranty limitations, induced Patty Precision to rely on GE's warranties. Id. at 1258. The estoppel argument, however, did not disclose any detriment to Patty Precision as a result of the asserted reliance. Id. at 1258.
257. Id. at 1257.
258. Id.
been erratic and lacking in consistent doctrinal orientation. The resolution proposed here to alleviate these problems has three elements: (1) abolition of tort liability in commercial sales transactions; (2) abolition of privity as a requirement in warranty actions; and (3) creation of different (and more restricted) limitations on actions against remote vendors.

As previously noted, tort liability is a redundant and unnecessary complication in commercial sales transactions. The efficiency of warranty limitations, developed in detail in Section IV, is not affected by whether the purchaser is an immediate or remote vendee. Warranty limitations are more likely to be given effect under a regime of contract than under a regime of tort.

The requirement of privity in warranty claims has been substantially eroded, and the trend appears to be continuing. The twilight existence of privity is a trap for the unwary and an invitation to continuing litigation and piecemeal legislative reform—all of which make the UCC a less than uniform statute.

With tort liability and privity thus vanquished, the policy issues may be addressed directly. At this juncture, it is necessary to distinguish between two classes of nonprivity cases: (1) cases in which the distribution of products is achieved through middlemen; and (2) cases in which products are assembled from components, or used products are rehabilitated or resold.

1. CHANNELS OF DISTRIBUTION

If a product passes from the manufacturer, through middlemen, and into the hands of the ultimate user, the manufacturer should have the same responsibility to the user as if it had sold the product directly. All warranties, express or implied, should be enforceable by the user against the manufacturer. The justifications are the same as in the privity case: enforcing conformity with general commercial expectations and forcing the manufacturer to make more efficient arrangements if they are appropriate. The problem is that the manufacturer may experience greater difficulty in making effective reallocations of risk in the case of the non-privity buyer. The following are suggested solutions.

First, all advertisements, brochures, or packaging should contain a prominent statement that the manufacturer's warranties are subject to limitations expressed in the manufacturer's warranty statement.

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259. See supra notes 131-53 & 182-83.
260. See supra notes 208 & 214-15; see also 1 J. WHITE & R. SUMMERS, supra note 26, at 528-30, 534-41; Speidel, Warranty Theory, supra note 81, at 26-27, 33-37, 42-43.
While express warranties cannot be contradicted by disclaimers, they can be negated by other statements;\textsuperscript{261} moreover, remedies may be limited in the case of both express and implied warranties.\textsuperscript{262}

Second, all dealers authorized to handle the manufacturer's product should be required to distribute the manufacturer's warranty statement at or before the time of sale to the ultimate user. In addition, each dealer can be required to execute an indemnification agreement that holds the manufacturer harmless if the manufacturer is exposed to warranty liability as a result of the dealer's failure to make a timely and adequate distribution of the manufacturer's warranty statement.

If these conditions are met, all purchasers should be deemed to have been apprised, as a matter of law, that warranty statements do exist and are available through authorized channels of distribution. These are commercial purchasers, and they should not be allowed to circumvent the manufacturer's carefully implemented warranty policy by purchasing products from unauthorized dealers in close-outs, liquidations, or the like.

In sum, privity would be abolished both for offensive and defensive purposes. No manufacturer in a "chain of distribution" case should be allowed to escape warranty responsibility by arguing a lack of privity; but neither should any purchaser be permitted to escape the manufacturer's warranty statement by pleading ignorance if: (1) all express warranties (advertisements, brochures, and the like) advise that such a statement exists; and (2) all authorized distributors make the statement available at or before the time of sale. Most of these proposals can be effectuated under existing UCC provisions. The only needed supplementation is a provision that a buyer will be deemed to know that warranty limitations exist if the limitations are referred to in all advertising material of the manufacturer and are distributed by the manufacturer's authorized dealers. The proposed change is unlikely to conflict with expectations in the commercial sector, and lack of buyer knowledge under the circumstances described should be treated as willful ignorance.

2. COMPONENTS AND USED PRODUCTS

When a manufacturer sells a newly finished product to a user, whether directly or through intermediaries, it is reasonable to impose warranty obligations in accordance with the terms of the preceding Section. It would be inordinately wasteful, however, to impose such

\textsuperscript{261} See supra note 44.

\textsuperscript{262} See supra notes 32-37.
requirements on the manufacturers of components, and it would be wholly impracticable to impose such requirements on the manufacturers of original equipment that was subsequently rehabilitated or resold after use by the initial purchaser. In such cases, the general rule should be that no warranties are implied and that express warranties must run directly to the user. Some examples may be helpful.

Example 1. A supplier provides components to a manufacturer of a finished product, the supplier engages in no advertising in connection with this finished product, and the supplier’s brand name is not prominently displayed on the finished product. The purchaser of the finished product, proximate or remote, must look to the manufacturer of the finished product for warranty protection in accordance with the warranty statement of that manufacturer. The supplier of the components should not be liable, in warranty or in tort, for unrealized expectations or property damage. Under these circumstances, the purchaser has no basis for looking beyond its immediate vendor: the only losses are commercial in nature, and the remote supplier has made no commitments, express or implied, to the ultimate purchaser.

Example 2. A supplier provides a component to the manufacturer of a finished product and engages in advertising with respect to either that component or the finished product, or its brand name is prominently displayed on the finished product. This provides a basis for a warranty, express or implied, running from the supplier of the component to the ultimate user. Liability under this warranty could nonetheless be limited in either of two ways. The component supplier could be named in the warranty statement of the manufacturer, thereby obtaining protection similar to that of the manufacturer as a third-party beneficiary of the manufacturer-user contract. For example, an exclusion of consequential damages could expressly apply to suppliers of components as well as to the selling manufacturer. Alternatively, the component supplier could issue a separate warranty statement to the ultimate user and enter into either direct contractual relations or indirect relations through dealers. The purchaser could then pursue the component supplier for breach of warranty, but such action would be subject to the limitations in the component supplier’s warranty statement.

Example 3. A seller of rehabilitated goods, or of assembled goods consisting of components that were not supplied directly by their manufacturers, would be subject to warranty liability to ultimate users in accordance with the UCC. But manufacturers of the original products would be immune except to the extent that they expressly warranted their components by separate representations related to the
PRODUCT DEFECTS

rehabilitated or assembled product. For example, a manufacturer of a hydraulic brake system could warrant the performance of that system in a rebuilt truck incorporating the system, but it would have to do so expressly in relation to the rebuilt truck. There would be no implied warranties, and express warranties directed to other applications (such as direct sales of the brake system to others) would not apply to the rebuilt truck.

Example 4. Finally, the buyer of a used product may obtain warranty rights by assignment from the initial purchaser. In the absence of a restriction in the warranty itself, warranty rights are assignable. However, the subsequent purchaser (or assignee) takes subject to all limitations applicable to the original purchaser (or assignor). The obligations of the manufacturer are not enlarged by assignment.

These proposals are generally in accord with existing law, but clarification would be useful. The most troublesome situation involves the assembler of new goods, not specifically authorized by manufacturers of components. Here, as in the case of unauthorized dealers, purchasers should be deemed to know that component manufacturers do not warrant their products unless they do so explicitly. This is probably in accord with commercial expectations; if not, the deviation suggested by the proposal is not a dramatic one and it is necessary in order to prevent uncontrolled extensions of warranty liability.

3. DANGEROUS PRODUCTS

The abrogation of tort liability in this context may leave some uneasy about assuring responsibility for product safety. On this, several points deserve emphasis.

First, these proposals are confined to property damage and other commercial loss. Liability for personal injuries is unaffected. Second, these proposals are confined to commercial participants. Warranties


involving ordinary consumers are not addressed. Third, these propos-
als apply only to purchasers of products; they do not bind third par-
ties. If, for example, a farmer purchased a pesticide and assumed the
risk of crop damage, that farmer could not sue for crop loss if the
pesticide proved to be harmful. A neighboring farmer, however,
could sue the manufacturer if his crop was contaminated by the pesti-
cide purchased and used by the first farmer. Finally, someone will
be responsible for product safety (usually the manufacturer of the fin-
ished product); in the absence of a valid limitation, that responsibility
extends to all property losses.

In sum, the proposed resolution provides a means of allocating
risks between buyers and sellers, largely without regard to privity, but
the allocation does not provide immunity for unsafe products or an
incentive to produce unsafe products.

VI. PERSONAL INJURIES IN THE CONTEXT OF COMMERCIAL
SALES TRANSACTIONS

For the most part, this Article has avoided issues dealing with
liability for personal injuries. There are a few instances, however, in
which personal injury claims may emerge in a commercial context.

First, it is clear that if a product causes personal injury, the typi-
cal victim—whether consumer, employee, or bystander—can bring
suit against the manufacturer and recover, in actions based on negli-
gence, strict liability or misrepresentation, if the standards of the per-
tinent tort theory have been satisfied. Such cases are not affected by
any of the proposals made in this Article. The victims are not fore-
closed by contractual provisions allocating risks between the manu-
facturer and its purchaser because the victims are not parties to the
manufacturer-purchaser contract.

Second, the manufacturer and its purchaser may nonetheless
allocate ultimate responsibility for personal injuries by contracts of
indemnity. In one case, for example, a railroad sold a bridge to a
commercial buyer, who agreed to indemnify the railroad for any dam-
ages relating to the removal of the bridge, including damages resulting
from railroad negligence. In an accident connected with the

265. E.g., Chapman Chem. Co. v. Taylor, 215 Ark. 630, 222 S.W.2d 820 (1949); accord
buyer's employee); Ferragamo v. Massachusetts Bay Transp. Auth., 395 Mass. 581, 481
750, 350 N.Y.S.2d 617 (1973) (same).

266. See supra note 265.

267. Southern Pac. Transp. Co. v. Nielsen, 448 F.2d 121, 122 (10th Cir. 1971); accord
removal of the bridge, a railroad employee was killed; his administratrix later recovered damages from the railroad premised on the railroad's negligence. The railroad obtained reimbursement from the buyer of the bridge under the indemnity provision of the contract of sale.

The sole remaining point is a troublesome one, an issue on which pertinent authority is surprisingly sparse. Suppose, for example, that the buyer is not a corporation but a natural person such as a sole proprietor. May the buyer assume the risk of personal injury to himself, notwithstanding breaches of warranty or tortious misconduct on the part of the seller? In Turner v. International Harvester Co., the buyer of a tractor—a sole proprietor—was killed when the cab collapsed on top of him while he was working on the engine. The buyer's widow sued for breach of warranty and also alleged negligence and strict product liability. The seller relied on the fact that the tractor was a used one which had been sold "as is." The court held that the disclaimer was effective to defeat the widow's warranty claim, but not sufficiently explicit to preclude jury consideration of whether the buyer had unequivocally waived the seller's responsibility for any safety defects. A similar case involved the lessee of a gasoline service station, injured as a result of the negligence of his oil company landlord. In striking down an allocation of the risk of injury to the lessee-operator, the court relied heavily on procedural unconscionability—the failure of the oil company to bring the contract provision to the attention of the service station operator.
Both cases are ambivalent on the legality of risk allocation in a context of complete disclosure. The pertinent UCC provision on contractual modification of remedies is also unhelpful. It provides: "Limitation of consequential damages for injury to the person in the case of consumer goods is prima facie unconscionable but limitation of damages where the loss is commercial is not."\textsuperscript{278} Nothing is said, one way or the other, about a sole proprietor sustaining personal injuries as a result of a defective nonconsumer product (such as a machine, lumber used for scaffolding, or industrial chemicals).

In the context of injuries to sole proprietors, a rule barring exculpatory clauses may assist in resolving uncertainties. Manufacturers of products can obtain insurance against personal injury claims stemming from product defects.\textsuperscript{279} Moreover, they can shift the risks of personal injury to the buyer if the buyer is an artificial entity. If the logic of risk allocation suggests that the buyer, rather than the seller, should bear the risk of personal injuries, the seller can insist on the following: (1) that the buyer incorporate; (2) that the buying corporation insure against personal injury claims; and (3) that the buying corporation agree to indemnify the seller for any personal injuries caused by the purchased product, including those sustained by the buyer in his individual capacity. Under this arrangement, the buying corporation would obtain the requisite liability insurance and would assume ultimate responsibility for all personal injury claims (including a claim by the buyer in his individual capacity).\textsuperscript{280}

In sum, under the limited circumstances specified, claims for personal injuries can be accommodated within the general structure of risk allocation discussed in this Article. As long as both parties to the sales transaction are commercial entities, the transaction can be structured so as to place responsibility for the risk of personal injury on the party that is in the best position to assume that risk at the lowest cost.\textsuperscript{281}

\textsuperscript{278} U.C.C. § 2-719(3) (1987).
\textsuperscript{279} See 2 R. Long, supra note 187, 11-1 to 11-9; W. Rodda, Property and Liability Insurance 394-96 (1966).
\textsuperscript{280} Of course, there are many transactions in which this mode of reallocating risks would be impracticable—for example, the sale of automobiles and pickup trucks to small entrepreneurs. These are cases, however, in which the buyers are likely to be indistinguishable, for all practical purposes, from ordinary consumers. Under the approach here proposed, all such buyers would be protected under normal product liability rules in the event of personal injury.
\textsuperscript{281} This Article does not address the broader question of whether products liability law is an appropriate means of providing insurance against personal injury. For recent criticisms of this "insurance" approach, see Epstein, Products Liability as an Insurance Market, 14 J. Legal Stud. 645 (1985); Priest, The Current Insurance Crisis and Modern Tort Law, 96 Yale L.J. 1521 (1987); Schwartz, Proposals for Product Liability Reform: A Theoretical
VII. CONCLUSION: THE CASE FOR CONTRACT

When parties are strangers to one another, there is no alternative to the law of torts. A motorist might prefer to enter a contract with other motorists, agreeing that each party shall carry his or her own insurance and not seek compensation from others. Such contracts, however, are impracticable. Accordingly, courts are compelled to adopt general rules to govern liability for automobile accidents—rules that may or may not be efficient in the general run of cases, but that are almost certainly inefficient in a significant subset of cases (such as where both parties, \textit{ex ante}, would have preferred to rely on first-party insurance). When contract is available as an alternative, it is possible for parties to reach efficient solutions appropriate to their particular circumstances.

But the availability of contract is not enough. This Article does not attempt to address disclaimers of product liability in consumer cases. Suffice it to say that because of limitations on consumer knowledge and because of disparities in consumer wealth, it cannot be said that contractual reallocations of risk are economically efficient and socially acceptable in the general run of manufacturer-consumer transactions.\footnote{Synthesis, 97 YALE L.J. 353 (1988). The discussion in this Section is intended to show the relationship between personal injury liability and the allocation of risks between commercial parties, and to show the practicability of bringing injury to the person of an entrepreneur within the general risk allocation structure if the parties desire to do so.}

These limitations, however, do not apply to commercial transactions. As discussed in Section IV, the efficiency of contractual allocations of risk in the commercial context does not depend to any significant extent on the competitive condition of markets or on the market participants' knowledge of risks (although knowledge of contract terms is significant). Similarly, wealth is not a significant variable. The impact of risk reallocations on the wealth of business firms is indistinguishable from any other contract provision—including

\footnote{In some states, a sole proprietor can elect coverage under workers' compensation statutes. \textit{See}, \textit{e.g.}, N.Y. WORK. COMP. LAW § 54(8) (McKinney 1988); \textsc{Wis. Stat. Ann.} § 102.075 (1988). Such an election would ameliorate the problem of personal injury to the proprietor.}

\footnote{For a discussion of the limitations on consumer knowledge, see authorities cited supra note 195. For a discussion of the problems associated with consumer wealth, see Jones, \textit{Revision of Public Standards: Exculpatory Agreements in Leases}, 63 N.Y.U. L. REV. 717, 746-48 (1988); Kronman, \textit{Paternalism and the Law of Contracts}, 92 YALE L.J. 763, 770-74 (1983). If, for example, first-party insurance were to be substituted for products liability as a means of compensation for product-related accidents, some consideration would have to be given to the affordability of first-party insurance for less affluent members of society—as compared with the implicit insurance provided with purchased products (and reflected in a product's price). Wealth disparities may not prove to be an insuperable obstacle, but they are a factor that must be considered in cases involving compensation for consumers.}
price—that distributes benefits and burdens among the parties to commercial contracts. If price is not controlled, intervention with respect to any other contract term is likely to produce inefficient arrangements with adverse effects upon one or both parties. The weaker party is not advantaged by requiring the stronger party to pursue inefficient arrangements for which a higher price will be charged. 283

The role of tort law in commercial product liability cases is redundant and perverse. It is used by litigants and courts to undermine allocations of risks agreed to by the parties and to substitute judicial solutions for contractual arrangements that are almost certainly superior in terms of both fairness and efficiency. Substantial gains can be achieved by excluding tort liability from business disputes concerning the allocation of commercial losses.

283. This point is developed in further detail in Jones, supra note 282, at 737-38, 749-50.
VIII. APPENDIX: THE ECONOMIC LOSS DOCTRINE IN COMMERCIAL SALES TRANSACTIONS

1. Absent an accident-like injury to the product itself, or to the person or other property of the buyer, the overwhelming majority of courts deny recovery, in negligence and in strict liability, to the buyer of a defective product:


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Corp. v. Zack Co., 445 So. 2d 350 (Fla. Dist. Ct. App.) (negligence and strict liability), review denied, 453 So. 2d 45 (Fla. 1984);

2. There is some authority to the contrary, particularly in cases asserting negligence:


Many of the cases sustaining liability for economic loss are no longer authoritative or are subject to serious question: (1) the Massachusetts decision in Omni Flying Club has been disapproved in subsequent opinions, see Bay State-Spray & Provincetown S.S. Co. v. Caterpillar Tractor Co., 404 Mass. 103, 533 N.E.2d 1350 (1989); (2) the decisions under Michigan law in Feldman, Spence, and Southgate have been superseded, see Great Am. Ins. Co. v. Paty's, Inc., 154 Mich. App. 634, 397 N.W.2d 853 (1986), appeal denied, 428 Mich. 874 (1987); (3) the decision under Minnesota law in Feeders has been superseded, see Superwood Corp. v. Siempelkamp, 311 N.W.2d 159 (Minn. 1981); (4) the decisions under Ohio law in Mead and Continental Oil have been superseded, see Chemitol Adhesives, Inc. v.
American Mfrs. Mut. Ins. Co., 42 Ohio St. 3d 40, 537 N.E.2d 624 (1989); (5) the Washington decisions in *Berg* and *Nakanishi* have been overturned by statute, see *Wash. Rev. Code Ann.* § 7.72.010(4), (6) (Supp. 1989); and (6) the decisions under Wisconsin law in *R & L Grain* and *City of La Crosse* are of questionable validity, see Wisconsin Power & Light Co. v. Westinghouse Elec. Corp., 830 F.2d 1405 (7th Cir. 1987); Sunnyslope Grading Inc. v. Miller, Bradford & Risberg, 148 Wis. 2d 910, 437 N.W.2d 213 (1989). In addition, there are unresolved conflicts in the California decisions with respect to negligence.

§ 507-D:(1)(I) (1983) (referring to "property damage or other damage").

The product liability statutes cover issues of varying scope. They have received scant attention from the courts in resolving issues of economic loss. There are, however, exceptions. See, e.g., Purvis v. Consolidated Energy Prods. Co., 674 F.2d 217 (4th Cir. 1982) (interpreting the South Carolina statute's reference to "physical harm" to exclude the failure of a structure to cure tobacco); Mac's Eggs, Inc. v. Rite-Way Agric. Distrub., 656 F. Supp. 720 (N.D. Ind. 1986) (interpreting the Indiana statute's requirement of "physical injury" to exclude a malfunction in a feed system which led to losses of chickens and a lower yield); Verdon v. Transamerica Ins. Co., 187 Conn. 363, 371, 446 A.2d 3, 8 (1982) (observing that the Connecticut statute permitted recovery for damage to the product sold, but not for economic loss); Washington Water Power Co. v. Graybar Elec. Co., 112 Wash. 2d 847, 774 P.2d 1199 (recognizing that Washington's statute disallowed claims for economic loss but expressing uncertainty about the scope of the economic loss concept), amended, 779 P.2d 697 (1989).