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Manufacturing Defect

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MANUFACTURING DEFECTS

DAVID G. OWEN*

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* Carolina Distinguished Professor of Law, University of South Carolina. Earlier versions of parts of this Article appeared in *Products Liability Advisory*, and a later version of most of this Article will appear as a chapter in DAVID G. OWEN, *PRODUCTS LIABILITY LAW* (Westgroup, forthcoming). Thanks to Joel Smith for providing research materials on tire manufacturing, and to Tom Andrews and Nikki Lee for research, editorial, and technical assistance. Whether or not any bugs are lurking in his food, Pat Hubbard contributed nothing to the discussion of that topic here.

This Article is dedicated to the memory of Gary Schwartz.

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I. INTRODUCTION

Manufacturing defects, flaws or irregularities in products arising from errors in production,¹ give rise to the most basic type of products liability claim. The misalignment of a punch press may result in a jagged burr along a product's metal edge;² the misadjustment of a nut on a bolt may interfere with a machine's operation;³ and the failure to prevent foreign matter from entering food or drink may cause its contamination.⁴ Tire failures frequently are the result of defective manufacturing.⁵ For example, a rash of failures of Bridgestone/Firestone tires on Ford Explorers probably resulted in part from various irregularities in the

1. See, e.g., *Wheeler v. Ho Sports Inc.*, 232 F.3d 754, 757 (10th Cir. 2000) ("A product is defective in manufacture if it 'deviates in some material way from its design or performance standards. The issue is whether the product was rendered unsafe by an error in the manufacturing process.'"); *Lyall v. Leslie's Poolmart*, 984 F. Supp. 587, 593 (E.D. Mich. 1997) ("A manufacturing defect claim relates to quality control; it requires proof that the product was an anomaly that failed to conform to the manufacturer's own standards."); *Wood v. Old Trapper Taxi*, 952 P.2d 1375, 1379-80 (Mont. 1997) ("Under a manufacturing defect theory, the central question is whether the product is flawed due to improper construction. . . . [Manufacturing defects are] 'imperfections that inevitably occur in a typically small percentage of products of a given design as a result of the fallibility of the manufacturing process. A defectively manufactured product does not conform in some significant aspect to the intended design, nor does it conform to the great majority of products manufactured in accordance with that design.'") (quoting James A. Henderson, Jr., *Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531, 1543 (1973)) (alteration in original); *Miles v. Ford Motor Co.*, 922 S.W.2d 572, 585 (Tex. Ct. App. 1996), *rev'd in part on other grounds*, 967 S.W.2d 377 (Tex. 1998) ("A manufacturing defect exists when a product does not conform to the manufacturer's design standards [and] blueprints. . . .").

Some state statutes provide liability for manufacturing defects, usually defining such defects in terms of departure from intended design. See *infra* notes 94-96 and accompanying text.

2. See, e.g., *Ford Motor Co. v. Zahn*, 265 F.2d 729 (8th Cir. 1959) (involving a jagged burr on car's dashboard ashtray).

3. See, e.g., *Jenkins v. Gen. Motors Corp.*, 446 F.2d 377 (5th Cir. 1971) (involving inadequately torqued nut on bolt in suspension system that resulted in bolt falling out and loss of steering and subsequent brake failure).

4. See, e.g., *Brayman v. 99 West, Inc.*, 116 F. Supp. 2d 225, 228 (D. Mass. 2000) (involving a piece of glass in mashed potatoes); *Cooper v. Borden, Inc.*, 709 So. 2d 878 (La. Ct. App. 1998) (involving penicillin in milk).

5. See generally 7A AMERICAN LAW OF PRODUCTS LIABILITY 3D § 98 (1999) (discussing tire failure cases from various jurisdictions).

production process.⁶ When the manufacturing process goes awry, the resulting products may fail to meet the manufacturer's own design specification standards. If such a product escapes the manufacturer's quality controls, its flawed condition may lead to its failure during use, to an accident, and possibly to an injury to the user or another.

In general, manufacturers and other suppliers are liable for injuries caused by manufacturing defects in products that they sell.⁷ *Keeler v. Richards Mfg. Co., Inc.*,⁸ which involved a surgical compression screw, is illustrative. The screw broke several months after a surgeon inserted it into the plaintiff's broken hip to assist the healing process.⁹ In the plaintiff's action against the manufacturer, her experts testified that the screw had four irregularities they considered manufacturing defects, any one of which could have caused the failure by increasing stress concentrations that could have led to fatigue failure in the screw: (1) the screw's internal threads were longer (1.1875 inches) than the maximum length (1.125 inches) specified in the blueprint specifications; (2) the screw contained excessive metal debris which could have interfered with the surgeon's ability to compress the screw properly, leading to excess movement of the bones; (3) its radius was slightly less than the exemplar screw furnished by the manufacturer; and (4) it failed to comply with the American Society of Testing Materials 35% ductility standard.¹⁰ The jury concluded that the screw was defectively manufactured, and the court upheld this determination on appeal.¹¹

In former times, from ancient Rome through medieval England and into early American law of the nineteenth and early twentieth centuries, the incipient law of products liability (much of which involved defective food and drink) was largely

6. While manufacturing defects appear to have been involved in many of the failures, the accumulating evidence suggests that various design shortcomings also played a major role. *See, e.g.*, SAFETY ASSURANCE OFFICE OF DEFECTS INVESTIGATION, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP., ENGINEERING ANALYSIS REPORT AND INITIAL DECISION REGARDING EA00-023: FIRESTONE WILDERNESS AT TIRES 29-30 (2001) (on file with author) (suggesting design defects in the Wilderness AT Tires); Alan B. Kruegar & Alexandr Mas, *Strikes, Scabs and Tread Separation: Labor Strike and The Production of Defective Bridgestone/Firestone Tires* (Jan. 9, 2002) (unpublished paper, Princeton Univ.) (on file with author) (finding a correlation between a labor dispute at the Decatur Bridgestone/Firestone plant and an inordinately high proportion of manufacturing defects during the period of the dispute).

7. On liability for manufacturing defects, see generally 1 DAVID G. OWEN, M. STUART MADDEN & MARY J. DAVIS, *MADDEN & OWEN ON PRODUCTS LIABILITY* ch. 7 (3d ed. 2000) [hereinafter *MADDEN & OWEN ON PRODUCTS LIABILITY*]; 2 AMERICAN LAW OF PRODUCTS LIABILITY 3d ch. 31 (1999); 2 LOUIS R. FRUMER & MELVIN I. FRIEDMAN, *PRODUCTS LIABILITY* § 11.02 (2001) [hereinafter *FRUMER & FRIEDMAN*]; *RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY* §§ 2(a), 3 (1998) [hereinafter *PRODUCTS LIABILITY RESTATEMENT*].

8. 817 F.2d 1197 (5th Cir. 1987).

9. *Id.* at 1199.

10. *Id.* at 1200-01.

11. *Id.* at 1201.

comprised of cases involving physical flaws or defects.¹² With the advent of modern products liability law during the mid-1900s,¹³ manufacturing defect cases for a variety of reasons began to occupy a decreasing proportion of products liability litigation as the plaintiffs' bar increasingly challenged the sufficiency of product designs and warnings.¹⁴ This proportional decline in manufacturing defect cases in part reflects improvements in the technology of production engineering, including quality assurance. Moreover, as discussed below, the liability standards governing manufacturing flaw cases are generally quite clear and noncontroversial—there usually is little debate over whether a product containing a physical flaw is “defective.” Thus, manufacturing flaw cases are more likely to settle than design and warnings defects cases which by nature involve normative judgments of safety sufficiency. Disputes in manufacturing defect cases normally involve the sufficiency of evidence of causation—whether the product in fact contained a

12. See, e.g., *Van Bracklin v. Fonda*, 12 Johns. 468 (N.Y. 1815) (involving contaminated beef); *Osgood v. Lewis*, 2 H. & G. 495, 519 (Md. 1829) (involving inferior cooking oil sold as higher grade oil); *Langridge v. Levy*, 2 M. & W. 519, 150 Eng. Rep. 863 (Ex. 1837), *aff'd*, 4 M. & W. 337, 150 Eng. Rep. 1458 (Ex. 1838) (involving a defective gun fraudulently represented as safe); *Devlin v. Smith*, 89 N.Y. 470 (1882) (involving planks on painter's scaffold nailed rather than lashed down); *Schubert v. J.R. Clark, Co.*, 51 N.W. 1103 (Minn. 1892) (involving step ladder constructed of cross-grained and decaying lumber); *Lewis v. Terry*, 43 P. 398 (Cal. 1896) (folding bed's legs failed to lock into place). On early law generally, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, ch. 1. The development of warranty law liability for selling defective foodstuffs is examined in 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:2; see also *infra* Part IV.A.

In the twentieth century, the classic products liability cases involved manufacturing defects. See, e.g., *MacPherson v. Buick Motor Co.*, 111 N.E. 1050 (N.Y. 1916) (holding that an auto manufacturer was liable in negligence for injuries caused by the collapse of car's wheel made of defective wood); *Henningsen v. Bloomfield Motors, Inc.*, 161 A.2d 69, 75 (N.J. 1960) (involving a defect in car's steering system and the breach of an implied warranty). In *Greenman v. Yuba Power Products, Inc.*, 377 P.2d 897, 900 (Cal. 1963), it is unclear whether the set screws were “inadequate” because of a defect in manufacture or design.

13. Even in the 1950s, manufacturing defects still dominated products liability litigation. See Richard G. Wilson, *Products Liability Part 1: The Protection of the Injured Person*, 43 CAL. L. REV. 614, 636 (1955) (“The chief concern is, of course, negligent manufacture, the insecure attachment of a device on a machine, the introduction of a foreign substance in a loaf of bread, the use of a harmful chemical in a cosmetic.”).

14. See generally James A. Henderson, Jr., *Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication*, 73 COLUM. L. REV. 1531 (1973) (arguing that courts go beyond the limits of adjudication when they attempt to establish product safety standards in cases involving the liability of manufacturers); Dix W. Noel, *Manufacturer's Negligence of Design or Directions for Use of a Product*, 71 YALE L.J. 816 (1962) (examining the *MacPherson* rule that a manufacturer may be liable for negligence to remote users of its products); George L. Priest, *Strict Products Liability: The Original Intent*, 10 CARDOZO L. REV. 2301 (1989) (examining the development of § 402A of *Restatement (Second) of Torts'* standard of strict liability for defective and unreasonably dangerous products); Aaron D. Twerski et al., *The Use and Abuse of Warnings in Products Liability—Design Defect Litigation Comes of Age*, 61 CORNELL L. REV. 495 (1976) (arguing that design defect cases that require courts to set independent product safety standards by judging existing designs as defective are within the limits of adjudication).

manufacturing flaw attributable to the manufacturer, and, if so, whether that flaw caused the plaintiff's harm.¹⁵ Such factual determinations are peculiarly committed to jury determination and usually are upheld on appeal.¹⁶

Manufacturing defect claims possess certain advantages for plaintiffs over claims involving design and warnings defects. First, the defendant is less likely to invest as much in defending a manufacturing defect claim since it challenges only a single product unit rather than the entire line of products.¹⁷ In addition, and quite unlike design and warnings cases, the liability standards for manufacturing defects—departure from intended design¹⁸ and product malfunction¹⁹—are still explicitly “strict.”²⁰ Moreover, manufacturing defect cases may be immune from certain types of defenses applicable to other types of cases.²¹ Nor can it be doubted that moral imperatives normally favor recovery for plaintiffs injured by physical flaws in the products they buy and use. Manufacturers deliberately choose the level of manufacturing flaws in their products by the level of investment they choose to make in the quality of their production and quality control processes.²² For this reason, and because buyers reasonably expect that the products they purchase will be free of defects, principles of fairness, truth, and restitution all demand that manufacturers compensate persons injured by production defects.²³

For these reasons, and to avoid the cost and publicity of litigation with a low probability of success, a manufacturer persuaded that a physical flaw in one of its products injured a claimant normally will be amenable to settling the case. But a manufacturer is likely to litigate a case involving a physically flawed product if it believes (1) that its product was not in fact defective;²⁴ (2) that, even if the product was defective, the plaintiff's harm was caused by something other than the defect;²⁵

15. On causation issues, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 12:1.

16. *See, e.g., Jenkins v. Gen. Motors Corp.*, 446 F.2d 377 (5th Cir. 1971) (upholding jury's determination that crash was caused by defective suspension system rather than by driver inattention); *Shoshone Coca-Cola Bottling Co. v. Dolinski*, 420 P.2d 855 (Nev. 1966) (upholding jury's rejection of bottler's theory that third-party tamperer put mouse in bottle of Squirrt).

17. This difference gives rise to a rule in some jurisdictions exempting manufacturing defect claims from the rule that prohibits evidence of subsequent improvements in design. *See, e.g., Cover v. Cohen*, 461 N.E.2d 864 (N.Y. 1984) (allowing evidence of a “manufacturer's subsequent modification to establish defectiveness” after balancing the risks of admitting such evidence).

18. *See* 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 8:3.

19. *See* Part III.B.

20. *See* 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, §§ 5:9, 5:10.

21. *See* N.J. STAT. ANN. §§ 2A:58C-3 (West 1987).

22. *See* Thomas A. Cowan, *Some Policy Bases of Products Liability*, 17 STAN. L. REV. 1077, 1086–92 (1965).

23. *See* David G. Owen, *The Moral Foundations of Products Liability Law: Toward First Principles*, 68 NOTRE DAME L. REV. 427, 467–68, 473–74, 502–03 (1993) (explaining moral bases of manufacturer liability for manufacturing defects).

24. *See* cases cited *infra* note 43.

25. *See, e.g., Calhoun v. Honda Motor Co.*, 738 F.2d 126 (6th Cir. 1984) (holding that plaintiff failed to establish that defective brakes caused motorcycle accident); *see also Church v. Martin-Baker Aircraft Co.*, 643 F. Supp. 499, 509 (E.D. Mo. 1986) (holding that “plaintiff's evidence failed to

(3) that, even if the product was defective, someone or something other than the manufacturer caused the defect after the product left the manufacturer's control;²⁶ or (4) that the plaintiff's damages claim is unreasonable.²⁷

A manufacturer may breach its duty to manufacture "nondefective" products in various ways. First, the raw materials or components used to construct the product may contain physical flaws. For example, the materials of which the product is comprised—such as the defective wooden spoke of the car wheel in *MacPherson v. Buick Motor Co.*²⁸—may contain weaknesses or impurities.²⁹ Similarly, the product may become contaminated during construction, as by metal debris falling into the product's interior.³⁰ Third, although a product's components

substantiate a causal connection" in the death of fighter pilot who ejected from plane); *Crocker v. Sears, Roebuck & Co.*, 346 So. 2d 921 (Miss. 1977) (affirming jury verdict for defendant because fire that destroyed plaintiff's house could just as plausibly have been started by recent rewiring of house, or by defective installation of stove, as by defect in the stove itself); *Price v. Ashby's Inc.*, 354 P.2d 1064, 1065 (Utah 1960) (recognizing that hole in airlift line caused one side of automobile to sink lower than the other, but there was no proof that this defect—rather than driver error—caused the car to continue straight at bend in road: "With two or more possible causes such as an inattentive driver and a mechanical defect . . . proof that it may have been either is not proof that it was in fact either.").

26. *See, e.g.*, *Cincinnati Co. v. Ford Motor Co.*, No. 00CA0057, 2001 WL 227362, at *1 (Ohio Ct. App. Mar. 9, 2001) (noting electrical short-circuit in car caused fire; summary judgment for defendant affirmed as to manufacturing defect because plaintiff failed to show that defect existed when car left manufacturer's control); *Maier v. Gen. Motors Corp.*, 346 N.E.2d 833 (Mass. 1976) (steering suddenly locking failed to establish defect at time of sale since steering had been serviced on three occasions). For more cases along these lines, see cases cited *infra* note 43.

27. There is little other explanation for many of the cases, often involving defective foodstuffs, where proof of a true manufacturing defect causing plaintiff's harm (including emotional distress) is clear. *See, e.g.*, *Brayman v. 99 West Inc.*, 116 F. Supp. 2d 225 (D. Mass. 2000) (rejecting excessiveness challenge with respect to verdict of \$25,000, for cut in diner's throat from piece of glass in mashed potatoes); *Kroger Co. v. Beck*, 375 N.E.2d 640 (Ind. Ct. App. 1978) (holding that \$2700 verdict is not excessive, despite absence of physical injury, for "prick" in housewife's throat from hypodermic needle in beef).

28. 111 N.E. 1050 (N.Y. 1916). *See also* *Bell v. T.R. Miller Mill Co., Inc.*, 768 So. 2d 953 (Ala. 2000) (noting telephone pole that broke, causing accident, was made of wood containing pre-manufacture decay and bursts).

29. *Pouncey v. Ford Motor Co.*, 464 F.2d 957 (5th Cir. 1972) (finding defective steel in pickup truck's fan blade); *Rudd v. Gen. Motors Corp.*, 127 F. Supp. 2d 1330, 1332 (M.D. Ala. 2001) (same).

30. *See, e.g.*, *Glover v. BIC Corp.*, 6 F.3d 1318, 1321 (9th Cir. 1993) (finding that brass chips left inside body of disposable lighter could cause it to fail to extinguish); *Trowbridge v. Abrasive Co. of Philadelphia*, 190 F.2d 825, 828 (3d Cir. 1951) (involving an abrasive wheel that disintegrated due to trapped gasses which generated internal fissures and cracks); *Flagstar, Inc. v. Davis*, 709 So. 2d 1132, 1134 (Ala. 1997) (involving biscuit and gravy contaminated with human blood); *Williams v. Volkswagen*, 226 Cal. Rptr. 306, 308 (Ct. App. 1986) (involving foreign substance cluster in metal near break point in steering wheel); *Simpson v. Logan Motor Co.*, 192 A.2d 122, 123 (D.C. 1963) (involving foreign substance in hydraulic fluid).

It is important to note that the mere presence of impurities in any amount does not automatically render a product legally defective. "[T]he concept of defect is not self-defining when a product contains a flaw. Since all products are flawed at some technological level, the decision must still be made as to when a flaw emerges as a defect. In order to make this decision, some judgmental standard

individually may be free of flaws, a mistake may be made in how they are assembled into final form. This is the most common type of manufacturing defect case. Thus, the ingredients in a particular batch may deviate from the specified formulation;³¹ the rivets, welds, screws, or bolts used to hold components together may be improperly made, applied, or inserted, weakening the product's assembly;³² or the product's components may otherwise be assembled improperly.³³ Fourth, after assembly, an otherwise properly produced product may not be finished sufficiently, leaving its edges too rough, too sharp, or otherwise hazardous.³⁴

must be utilized." Alvin S. Weinstein et al., *Product Liability: An Interaction of Law and Technology*, 12 DUQ. L. REV. 425, 430-31 (1974). "To a metallurgist all metallic structures contain flaws or irregularities at some size level. They range from dislocations at the atomic size level to cracks visible to the naked eye Since these flaws [unfortunately sometimes called *defects* by metallurgists] can be identified in all products, the critical question to be asked is when can these deviations from structural perfection really lead to a conclusion of [legal] defect." *Id.* at n.11. "Materials processing and fabrication are thus based upon flaw or irregularity control to achieve an economically feasible trade-off among all the properties of the material which, together with proper design, serve to achieve a given performance requirement [Thus], the mere presence of an identifiable irregularity or flaw in a metallic structure is in and of itself an insufficient basis for the establishment of defect." *Id.* at 432 n.11(4).

31. *See, e.g., Reiter v. Zimmer, Inc.*, 897 F. Supp. 154, 156 (S.D.N.Y. 1995) (involving improper proportion of ingredients in batch of bone cement).

32. *See, e.g., Jenkins v. Gen. Motors Corp.*, 446 F.2d 377, 379 (5th Cir. 1971) (involving an improperly tightened nut on a bolt that caused the suspension assembly to fail); *O'Donnell v. Geneva Metal Wheel Co.*, 183 F.2d 733, 736 (6th Cir. 1950) (involving a wheel barrow tire that exploded because metal rivets holding rim together were weakened during assembly by pressing the metal too thin which generated visible radial cracks); *Harley-Davidson Motor Co. v. Wisniewski*, 437 A.2d 700 (Md. Ct. Spec. App. 1981) (involving cross-threaded screw on throttle clamp that fractured); *Benson v. Tenn. Valley Elec. Coop.*, 868 S.W.2d 360 (Tenn. Ct. App. 1993) (involving a defective weld in aerial boom unit that failed in part because repair weld was too weak).

33. *See, e.g., Hewitt v. B.F. Goodrich Co.*, 732 F.2d 1554, 1557 (11th Cir. 1984) (involving tire bead bundle that broke during manufacturing process); *Hall v. Chrysler Corp.*, 526 F.2d 350 (5th Cir. 1976) (involving a misrouted transmission cable on a truck that came into contact with exhaust manifold which melted cable and caused transmission to lock in "drive" position although gear lever indicated "park"); *Chapman v. Maytag Corp.*, No. IP99-0039-C-D/F, 2000 WL 1038183, at *2 (S.D. Ind. July 27, 2000) (involving pinched wire in a stove); *Yamaha Motor Co. v. Thornton*, 579 So. 2d 619, 622 (Ala. 1991) (involving motorcycle speed reduction plate left out in manufacture); *Ford Motor Co. v. Massey*, 855 S.W.2d 897, 899 (Ark. 1993) (involving stiffness of truck throttle cable which caused vehicle to lurch into plaintiff); *Simon v. Coppola*, 876 P.2d 10, 14 (Colo. Ct. App. 1993) (involving a crimp in hot tub thermostat actuator that allowed water to overheat); *Horne v. Liberty Furniture Co.*, 452 So. 2d 204 (La. Ct. App. 1984) (involving chair parts improperly glued together); *Gasque v. Heublein, Inc.*, 281 S.C. 278, 284, 315 S.E.2d 556 (Ct. App. 1984) (involving a wire hood that was attached improperly to stopper in bottle of sparkling wine); *Willis v. Floyd Brace Co.*, 279 S.C. 458, 461, 309 S.E.2d 295, 297 (Ct. App. 1983) (involving a leg brace locking mechanism the component parts of which were improperly aligned).

34. *See, e.g., Stazenski v. Tennant Co.*, 617 So. 2d 344, 345 (Fla. Dist. Ct. App. 1993) (involving worker cut on sharp edge of industrial sweeper); *McBurnette v. Playground Equip. Corp.*, 130 So. 2d 117 (Fla. Dist. Ct. App. 1961), *rev'd in part on other grounds*, 137 So. 2d 563 (Fla. 1962) (involving a child whose finger was cut off by sharp edge of swing). *Compare Tibbetts v. Ford Motor Co.*, 358

Finally, a properly assembled and finished product may be rendered defective because of a dangerous flaw in how it is packaged.³⁵

The quality control process is designed to catch such manufacturing mistakes, but sometimes it does not. And while insufficient quality control may provide the basis for a claim of negligence,³⁶ a manufacturer's failure to adequately inspect or test its products is not itself a products liability claim.³⁷ A manufacturer's evidence of *good* quality control might seem to be logically irrelevant to a strict products liability claim, since the issue in such cases is the defectiveness of the product and not the manufacturer's conduct in allowing the defect to arise.³⁸ Nevertheless, especially in cases involving allegations of foreign objects or contamination in foodstuffs, such evidence may be admissible, even on strict liability in tort or breach of warranty,³⁹ if it tends to show that the manufacturer is not responsible for the defect, to wit, that the defect (if any) probably arose after the product left the manufacturer's control.⁴⁰

N.E.2d 460, 462 (Mass. App. Ct. 1976) (holding that rough inner edges of wheel covers were not dangerous for intended purpose).

35. See, e.g., *Helm v. Pepsi-Cola Bottling Co. of St. Louis*, 723 S.W.2d 465, 466 (Mo. Ct. App. 1986) (exploding glass injured plaintiff after bottles fell through cardboard carton); *DeWitt v. Eveready Battery Co.*, 550 S.E.2d 511, 513-14 (N.C. Ct. App. 2001) (involving acid leaking from battery case onto plaintiff).

36. Because quality control procedures are an important component of the production process, employed to catch defectively manufactured products before distribution to users, evidence of inadequate quality control may be especially relevant to negligent manufacturing claims. See, e.g., *Jones v. United Metal Recyclers*, 825 F. Supp. 1288, 1298 (W.D. Mich. 1993) (denying summary judgment in case involving failure to inspect for defects); *Ford Motor Co. v. Zahn*, 265 F.2d 729, 731 (8th Cir. 1959) (discussing duty of manufacturer to do "reasonable inspection or tests"); see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 2:3.

37. There is no separate claim for defective quality control. See *Kociemba v. G.D. Searle & Co.*, 707 F. Supp. 1517, 1527 (D. Minn. 1989); *Valentine v. Baxter Healthcare Corp.*, 81 Cal. Rptr. 2d 252, 264 (Ct. App. 1999).

38. See, e.g., *Nave v. Rainbo Tire Serv., Inc.*, 462 N.E.2d 620 (Ill. App. Ct. 1984) (holding manufacturer's conduct is not a factor in strict liability cases).

39. U.C.C. § 2-314 cmt. 13 (1987).

In an action based on breach of warranty, it is of course necessary to show not only the existence of the warranty but the fact that the warranty was broken and that the breach of warranty was the proximate cause of the loss sustained [E]vidence indicating that the seller exercised care in the manufacture, processing or selection of the goods is relevant to the issue of whether the warranty was in fact broken.

Id.

40. See, e.g., *Brown v. Gen. Foods Corp.*, 573 P.2d 930, 934 (Ariz. Ct. App. 1978) (holding manufacturer's quality control procedures admissible on improbability that banana peel entered cereal box during production); *Hazelton v. Safeway Stores, Inc.*, 745 P.2d 309, 312 (Kan. Ct. App. 1987) (allowing baker's evidence that it tested for metal contamination in a case involving a needle in baked bread); *Johnesee v. Stop & Shop Cos.*, 416 A.2d 956, 960 (N.J. Super. Ct. App. Div. 1980) (holding quality control evidence proper in case of possibly contaminated soup, going to improbability it was defective).

As mentioned earlier, issues related to causation rather than defectiveness typically dominate cases based on claims of manufacturing defects. Especially if the product accident destroys direct evidence of why a product accident occurred, the crucial issue is often whether the plaintiff's proof sufficiently establishes that the accident was attributable to a manufacturing defect as opposed to some other plausible cause—such as normal wear and tear or the conduct of the user or someone else. In general, a plaintiff must establish, by a reasonable probability, that the product contained a defect attributable to the manufacturer and that such hypothesis is more likely than any other suggested by the evidence.⁴¹ If a product dangerously malfunctions, but the plaintiff is unable to prove the existence of a specific defect, the malfunction doctrine may provide relief if the plaintiff is able to show the probability of defect by eliminating other normal causes of such malfunctions, as discussed below.⁴² Yet an allegation of a manufacturing defect properly will be dismissed if the plaintiff fails to prove, one way or another, that the product contained a defect that caused the harm⁴³ and that the defect was in the product when it left the manufacturer's control.⁴⁴ In many manufacturing defect cases, as in products liability litigation generally, the plaintiff may, and often must, establish his case by competent expert testimony.⁴⁵

41. See *Triplett v. Gen. Elec. Co.*, 954 F. Supp. 149, 151 (W.D. Mich. 1996) (“[T]he plaintiff must provide direct or circumstantial evidence that ‘adequately supports a reasonable inference that the accident was probably caused by a defect attributable to the manufacturer.’”) (quoting *Holloway v. Gen. Motors Corp.*, 271 N.W.2d 777, 782 (1978)); *Klinke v. Mitsubishi Motors Corp.*, 556 N.W.2d 528 (Mich. App. 1996), *aff’d*, 581 N.W.2d 272 (Mich. 1998).

42. See *infra* Part III.B.

43. See, e.g., *Wheeler v. Ho Sports*, 232 F.3d 754 (10th Cir. 2000) (holding there was insufficient proof that floatation vest contained a manufacturing defect); *Pipitone v. Biomatrix, Inc.*, No. Civ. A. 00-1449, 2001 WL 568611, at *4 (E.D. La. May 22, 2001) (finding there was insufficient proof that defendant's biological serum was contaminated); *Booth v. Black & Decker, Inc.*, 166 F. Supp. 2d 215, 220 (E.D. Pa. 2001) (stating there was insufficient proof that manufacturing defect in toaster caused fire that burned plaintiff's house); *Prohaska v. Sofamor, S.N.C.*, 138 F. Supp. 2d 422, 444 (W.D.N.Y. 2001) (holding there was insufficient proof that defendant's pedicle bone screws were manufactured with inadequate construction materials, inadequate quality control and poor finishing processes); *Freeman v. Hoffman LaRoche, Inc.*, 618 N.W.2d 827, 841 (Neb. 2000) (dismissing manufacturing defect claim where plaintiff alleged manufacturing defect but no facts to support the allegations); *Holder v. Keller Indus.*, No. 05-97-01168, 2000 WL 141070, at *7-8 (Tex. Ct. App. Feb. 9, 2000) (holding there was insufficient proof that ladder was defectively manufactured).

44. See, e.g., *York v. Am. Med. Sys., Inc.*, No. 97-4306, 1998 WL 863790, at *6 (6th Cir. Nov. 23, 1998) (determining there was no proof that pinpoint hole in cylinder of inflatable penile prosthesis was caused by manufacturer).

The rule . . . applies only where the product is, at the time it leaves the seller's hands, in a [defective condition]. . . . The burden of proof [on this point] . . . is upon the injured plaintiff; and unless evidence can be produced which will support the conclusion that it was then defective, the burden is not sustained.

RESTATEMENT (SECOND) OF TORTS § 402A cmt. g (1965).

45. See, e.g., *Rudd v. Gen. Motors Corp.*, 127 F. Supp. 2d 1330, 1338 (M.D. Ala. 2001) (allowing expert testimony after careful scrutiny); *Moisenko v. Volkswagenwerk Aktiengesellschaft*, 100 F. Supp. 2d 489, 493 (W.D. Mich. 2000) (granting defendant's motion for summary judgment for

II. THEORIES OF LIABILITY

A defendant's liability for manufacturing defects may give rise to any number of products liability claims. For example, a manufacturer may misrepresent the purity of its products⁴⁶ or a supplier of contaminated food or drink may be negligent per se for violating a pure food statute.⁴⁷ More commonly, however, a seller of a defectively manufactured product is subject to liability under one or more of the three primary products liability theories of recovery—negligence, breach of implied warranty, and strict liability in tort.

A. Negligence

In earlier times, most products liability cases for manufacturing defects were brought in negligence.⁴⁸ A prominent case in point is *MacPherson v. Buick Motor Co.*,⁴⁹ which involved the crash of an automobile due to a defective wooden spoke in its wheel. Indeed, until the development of the doctrine of strict products liability in tort in the 1960s, most products liability cases were manufacturing defect cases brought in negligence.⁵⁰ Because negligence is much more difficult to prove than strict liability in manufacturing defect cases, negligence claims in such cases are less common today than formerly. Nevertheless, negligent manufacturing (including negligent testing and quality control) remains a viable basis of products liability recovery in almost every state.⁵¹

manufacturing defect claims; "it is well settled that such a claim cannot be proven without expert testimony"). *Compare* *Benzel v. Keller Indus., Inc.*, 567 N.W.2d 552 (Neb. 1997) (affirming plaintiff's verdict on expert testimony that collapse of ladder step was due to various defects attributable to improper assembly and that defendant's ladders failed to meet UL standards for gaps in steps and rails), *with* *Hamilton v. Emerson Elec. Co.*, 133 F. Supp. 2d 360 (M.D. Pa. 2001) (excluding expert testimony that miter saw brake was defective because it did not work at time of accident, and granting defendant's motion for summary judgment, where expert failed to examine saw and had no reliable basis for opinion).

46. On tortious misrepresentation, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, ch. 3. On breach of express warranty, see *id.*, § 4:2.

47. See *infra* notes 243-45 and accompanying text.

48. One small category of cases to the contrary involved defective foodstuff claims against retailers which most commonly asserted breach of warranty. See REED DICKERSON, PRODUCTS LIABILITY AND THE FOOD CONSUMER 69-70 (1951).

49. 111 N.E. 1050 (N.Y. 1916).

50. See Wilson, *supra* note 13, at 636.

51. A negligence claim is logically superfluous to a claim for strict liability in tort, since the former requires proof of all elements of the latter plus fault. See, e.g., *Guilbeault v. R.J. Reynolds Tobacco Co.*, 84 F. Supp. 2d 263, 280 (D. R.I. 2000) ("[I]t is unclear to this court why plaintiff would include a negligent manufacturing claim in their Complaint since strict liability will lie due to a manufacturing defect without . . . the additional requirement that defendant knew or should have known of the defect."). In addition, a few states by statute have merged negligence, warranty, and strict liability claims into a single "product liability" claim. See, e.g., CONN. GEN. STAT. ANN. §§ 52-572m(b), 52-572n (1958) (providing for single product liability claim); IND. CODE ANN. § 34-6-2-115

Negligence, it will be recalled,⁵² is unreasonable conduct, as measured against the conduct of a reasonable prudent manufacturer in the same or similar circumstances.⁵³ Ordinarily, reasonable care is ascertained according to a calculus of risk, balancing the burden or costs of improving safety against the foreseeable safety benefits of so doing. If the foreseeable risks from an occasional flaw are simply that a person may suffer a scratch or snag an article of clothing, then minimal quality control generally is sufficient.⁵⁴ Yet, if the foreseeable risks from a manufacturing flaw are substantial, as with defects in the steering or braking mechanisms of a car, then due care requires a manufacturer to devote considerable resources to preventing such errors during production and to catching resulting flaws thereafter through an effective system for quality control.⁵⁵

Because of the difficulties in proving the specific manufacturing mistake that caused a production flaw in an accident product, together with the likelihood that any such mistake was the result of the manufacturer's negligence, courts commonly allow juries to infer negligence from proof of a manufacturing flaw alone.⁵⁶

B. Strict Liability

Even if manufacturers exercise due care, however, they generally are strictly liable—in warranty and in tort—for injuries caused by production defects in

(Michie 1998) (same); LA. REV. STAT. ANN. § 2800.52 (West 1997) (same); N.J. STAT. ANN. § 2A:58C-1(b)(3) (West 1987) (same); WASH. REV. CODE ANN. § 7.72.010(4) (West 1992) (same).

52. Negligence claims are addressed generally in 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, ch. 2. For negligent manufacturing claims, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 7:2.

53. *Holder v. Keller Indus.*, No. 05-97-01168-CV, 2000 WL 141070, at *6 (Tex. Ct. App. Feb. 9, 2000) (explaining that defendant ladder manufacturer's conduct must be measured against "standard of a reasonably prudent manufacturer of ladders rather than an ordinary prudent person").

54. This was the defendant's argument made and rejected in *Ford Motor Co. v. Zahn*, 265 F.2d 729, 731-34 (8th Cir. 1959).

55. "The obligation to inspect must vary with the nature of the thing to be inspected. The more probable the danger the greater the need of caution." *MacPherson v. Buick Motor Co.*, 111 N.E. 1050, 1055 (N.Y. 1916) (Cardozo, J.).

A garment maker is not required to subject the finished garment to anything like so minute an inspection for the purpose of discovering whether a basting needle has not been left in a seam as is required of the maker of an automobile or of high speed machinery or of electrical devices, in which the slightest inaccuracy may involve danger of death.

See RESTATEMENT (SECOND) OF TORTS § 395 cmt. e (1965).

56. See, e.g., *Pouncey v. Ford Motor Co.*, 464 F.2d 957, 961 (5th Cir. 1972) (involving an automobile fan blade made of dirty steel); *Jenkins v. Gen. Motors Corp.*, 446 F.2d 377, 379 (5th Cir. 1971) (involving improper tightening of nut on bolt in rear suspension system); *Klinke v. Mitsubishi Motors Corp.*, 556 N.W.2d 528, 532 (Mich. Ct. App. 1996), *aff'd*, 581 N.W.2d 272 (Mich. 1998) (involving a car's steering knuckle that fractured); see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 2:3.

products that they make and sell.⁵⁷ The very essence of an ordinary exchange transaction involving a new product is the notion that the buyer is paying appropriate value for a certain *type* of “good” comprised of various utility and safety characteristics common to each unit of that type produced by the maker according to a single design. Both the manufacturer and the buyer contemplate (and hence contract for) an exchange of a standard, uniform monetary value for a standard, uniform package of utility and safety. At some level of abstract awareness most consumers know, of course, that manufacturers sometimes make mistakes and that the cost of perfect production for many types of products would be exorbitant. Yet, while consumers may abstractly comprehend the practical necessity of allowing imperfect production, their actual expectation when purchasing a new product is that its important attributes, including safety, will match those of other similar units.⁵⁸ When a purchaser pays full value for a product that appears to be the same as every other, only to receive a product with a dangerous hidden flaw, the product’s price and appearance both generate false expectations of safety in the buyer. Buyers do not intend to pay fair value for a mismanufactured product only to be maimed or killed.⁵⁹ Nor, in the modern world, can a manufacturer reasonably expect to be relieved of responsibility for such harm from hidden production defects.⁶⁰ Thus, the expectations of the parties, buttressed by principles of fairness and restitution, support the maker’s strict responsibility for harm from latent manufacturing defects.⁶¹ For all of these reasons, courts and legislatures widely provide that strict liability is the appropriate standard of liability for injuries resulting from manufacturing defects.⁶²

57. Similarly, retailers and other suppliers downstream from the manufacturer ordinarily are also strictly liable for harm from manufacturing defects in products they supply. *See* PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 1 cmt. e, § 2 cmt. c.

58. *See, e.g.,* Dico Tire, Inc. v. Cisneros, 953 S.W.2d 776, 783 (Tex. App. 1997) (affirming jury verdict for plaintiff in case involving a defective bead bundle and an exploding tire during repair) (“The manufacturing defect theory is based upon a consumer expectancy that a mass-produced product will not differ from its counterparts in a manner which makes it more dangerous than the others.”).

59. In the leading English case explaining this notion of implied warranty, Lord Ellenborough colorfully explained the concept: “[T]he intention of both parties must be taken to be, that [the product] shall be saleable in the market under the denomination mentioned in the contract between them. The purchaser cannot be supposed to buy goods to lay them on a dunghill.” *Gardiner v. Gray*, 171 Eng. Rep. 46, 47 (K.B. 1815).

60. If the defect is obvious, rather than hidden, there is no untruth within the transaction to generate false safety expectations in the consumer nor, hence, to support the manufacturer’s responsibility for resulting harm.

61. For a discussion of the policies underlying strict liability for manufacturing defects, see PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 2 cmt. a. For a discussion of the ethical bases for strict liability in this context, see Owen, *supra* note 23, at 468-77.

62. By defining liability for manufacturing defects in terms of departure from design specifications, both courts and legislatures are employing a basis of liability that is truly strict. *See infra* Part III.A.

1. Warranty

The earliest approach the modern law employed to enforce these expectations, which has now been in effect for about two centuries,⁶³ was to imply into the exchange transaction a promise or warranty by the seller of the basic, uniform soundness—safety, in this context—of its goods. Today, the implied warranty of merchantability provides buyers a general guarantee, enforceable under the Uniform Commercial Code, against manufacturing defects in the goods they buy.⁶⁴ Similarly, the sale of a defectively manufactured product may breach an express warranty⁶⁵ or the implied warranty of fitness for particular purpose.⁶⁶ While strict liability in tort in most states normally may be a preferable theory of recovery for personal injury damages, the implied warranty of merchantability offers a strict basis of liability for personal injuries in the few states that have not adopted the doctrine of strict liability in tort;⁶⁷ it provides a basis for economic losses in the many states that preclude recovery of such damages in tort;⁶⁸ and it offers a miscellany of other advantages in various situations.⁶⁹

2. Strict Liability in Tort

The doctrine of strict liability in tort, which evolved out of warranty cases involving manufacturing defects,⁷⁰ is particularly well-suited to claims for injuries caused by manufacturing defects.⁷¹ A majority of the earliest cases adopting § 402A

63. It has been in effect longer in England than in most states in this nation. See William L. Prosser, *The Implied Warranty of Merchantable Quality*, 27 MINN. L. REV. 117, 118-22 (1943).

64. U.C.C. § 2-314 (1987); see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 4:5.

65. *Id.* See *Spectron Dev. Lab. v. Am. Hollow Boring Co.*, 936 P.2d 852 (N.M. Ct. App. 1997).

66. U.C.C. § 2-315 (1987); see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 4:8.

67. The states are Delaware, Massachusetts, Michigan, North Carolina, and Virginia. See, e.g., *DeWitt v. Eveready Battery Co.*, 550 S.E.2d 511 (N.C. Ct. App. 2001) (bringing action under the implied warranty of merchantability for a battery that leaked acid); *Triplett v. Gen. Elec. Co.*, 954 F. Supp. 149 (W.D. Mich. 1996) (involving defective ballast in fluorescent light that caused fire; common law implied warranty).

68. See, e.g., *Spectron Dev. Lab.*, 936 P.2d 852 (involving economic losses and damage to defectively manufactured light-gas gun that exploded, and to owner's other property; implied and express warranty claims allowed, but negligence and strict liability in tort claims denied).

69. One advantage is the four-year statute of limitations (from the date of sale) under U.C.C. § 2-725 (1987), compared to the two- or three-year statute of limitations normally provided in tort. Some courts and juries may be more likely to find that a product malfunction alone establishes that a product was not "fit" for its ordinary purposes, under U.C.C. § 2-314(2)(c)(b) (1987), than that the product was "defective" for purposes of strict liability in tort. See, e.g., *Denny v. Ford Motor Co.*, 42 F.3d 106, 110 (2d Cir. 1994) (upholding jury finding that SUV which rolled over was not defective but was unfit for its ordinary purpose); see *infra* Part III.B.

70. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:2.

71. "Commentators and courts agree that the manufacturing defect case presents the clearest and strongest case for applying both strict liability in tort and the consumer expectations test." Rebecca Korzec, *Dashing Consumer Hopes: Strict Products Liability and the Demise of the Consumer*

of the *Restatement (Second) of Torts* in the mid-1960s involved manufacturing defects,⁷² and strict liability in tort remains the preferred basis of recovery in manufacturing defect cases generally⁷³ and under § 2(a) of the *Restatement (Third) of Torts: Products Liability (Products Liability Restatement)* in particular.⁷⁴

Whether a product is in a “defective condition unreasonably dangerous” under § 402A, according to the Reporter’s comments, depends upon whether it is dangerous beyond the safety expectations of ordinary consumers.⁷⁵ For this reason, and because the protection of reasonable consumer expectations is a basic rationale for imposing strict liability on sellers of defectively manufactured products, many of the earlier decisions involving manufacturing defects explained liability in terms of protecting consumer expectations.⁷⁶ Some decisions have not only explained but purported also to apply consumer expectations as a test of liability,⁷⁷ often with little success because of the vagueness inherent in the test.⁷⁸ Many other courts,

Expectations Test, 20 B.C. & INT’L COMP. L. REV. 227, 243 n.120 (1997). See also William E. Westerbeke, *The Sources of Controversy in the New Restatement of Products Liability: Strict Liability Versus Products Liability*, 8 KAN. J. L. & PUB. POL’Y 1, 1-2 (1998) (analyzing the development of products liability law in relation to the Restatements); 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:11. This point has long been acknowledged. See David A. Fischer, *Products Liability—The Meaning of Defect*, 39 MO. L. REV. 339 (1974).

72. Of the first eight cases adopting § 402A, all in 1965 and 1966, six appeared to involve manufacturing defect claims. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:3, at 273-74 nn.59-66.

73. See *Riley v. De’Longhi Corp.*, No. 99-2305, 2000 WL 1690183 (4th Cir. Oct. 30, 2000); *Indep. Sch. Dist. 441 v. Bunn-O-Matic Corp.*, No. CO-96-594, 1996 WL 689768 (Minn. Ct. App. Dec. 3, 1996).

74. See RESTATEMENT (SECOND) OF TORTS § 402A cmts. g, i (1965); see generally *Hamilton v. Emerson Elect. Co.*, 133 F. Supp. 2d 360 (M.D. Pa. 2001); *Myrlak v. Port Auth.*, 723 A.2d 45 (N.J. 1999) (quoting § 2(a) but decided under similar provision of products liability statute); *Spectron Dev. Lab. v. Am. Hollow Boring Co.*, 936 P.2d 852 (N.M. Ct. App. 1997); see generally PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 1 cmt. a, § 2 cmt. a. Today, many manufacturing defect cases are decided under the malfunction doctrine, as set forth in the *Products Liability Restatement* § 3. See *infra* Part III.B.

75. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, §§ 5:6, 8:3; Linda A. Sharp, Annotation, *Products Liability: Consumer Expectations Test*, 73 A.L.R. 5th 75 (1999) (explaining that many jurisdictions have adopted the consumer expectations test).

76. See *Cassisi v. Maytag Co.*, 396 So. 2d 1140, 1144-45 (Fla. Dist. Ct. App. 1981); *Phipps v. Gen. Motors Corp.*, 363 A.2d 955, 958 (Md. 1976); *State Stove Mfg. Co. v. Hodges*, 189 So. 2d 113, 120 (Miss. 1966); *Ford Motor Co. v. Darryl*, 432 S.W.2d 569, 571 (Tex. Civ. App. 1968).

77. See *Chapman v. Maytag Corp.*, No. IP99-0039-C-PIF, 2000 WL 1038183, at *3 (S.D. Ind. July 27, 2000); *Boy v. I.T.T. Grinnell Corp.*, 724 P.2d 612, 620 (Ariz. Ct. App. 1986) (“If something goes wrong in the manufacturing process, the result is a product which the manufacturer did not intend and which could hardly be contemplated by the consumer.”); see also *Indep. Sch. Dist. 441 v. Bunn-O-Matic Corp.*, No. CO-96-594, 1996 WL 689768, at *7 (Minn. Ct. App. Dec. 3, 1996) (explaining that the consumer expectation instruction is appropriate for manufacturing defect case).

78. See *Chapman*, 2000 WL 1038183, at *3; *Bhagvandoss v. Beiersdorf, Inc.*, 723 S.W.2d 392, 395-96 (Mo. 1987), *aff’g* No. WD36461, 1986 WL 141628, at *5 (Mo. Ct. App. Apr. 1, 1986); *Fitzgerald Marine Sales v. LeUnes*, 659 S.W.2d 917, 919 (Tex. App. 1983); *Controlled Atmosphere, Inc. v. Branom Instrument Co.*, 748 P.2d 686 (Wash. Ct. App. 1988). On the vagueness of the

apparently understanding that *rationales* for liability theories frequently serve poorly as liability *tests*, have tended to shy away from applying the consumer expectations standard as a formal test for establishing liability in manufacturing defect cases.⁷⁹ Recognizing that the risk-utility test is entirely inappropriate in a context which properly requires a strict liability standard,⁸⁰ most courts in the 1980s and early 1990s simply left the term manufacturing defect undefined without a liability “test” of its own.

Spurred in the 1990s by the liability definitions for manufacturing defects in the *Products Liability Restatement*, courts in recent years have increasingly based liability for manufacturing defects in two quite different ways. As a specific definition of manufacturing defect, recent decisions have turned to the *Products Liability Restatement*’s “departure from intended design.”⁸¹ And in cases involving product malfunctions under circumstances suggesting product defect, many courts have been applying the “malfunction doctrine,” a principle of circumstantial evidence allowing recovery on evidence of this type.⁸² These two bases of strict liability, examined in the following two sections, are now the principal liability tests for manufacturing defects.

III. MANUFACTURING DEFECT TESTS

For many years, both courts and commentators considered the meaning of the “manufacturing defect” concept so self-evident as to be self-defining. A defect in manufacture simply meant that through some mistake in the production process the product was rendered “defective.”⁸³ Thus, until quite recently, judicial decisions involving this form of defect generally failed to provide a definitional “test” of

consumer expectations test, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:6.

79. See, e.g., *Dico Tire, Inc. v. Cisneros*, 953 S.W.2d 776, 783 (Tex. App. 1997) (reasoning that “[d]esign defect cases are not based on consumer expectancy”).

However, if the relevant state’s statute defines defectiveness in consumer expectation terms, a court is bound to use that standard in manufacturing defect as other cases. See, e.g., *Chapman*, 2000 WL 1038183, at *4 (applying an Indiana statute to case involving a wire pinched between parts of stove during assembly).

80. “The risk-utility analysis applies to design defects cases, not manufacturing defect cases.” *Leverette v. Louisville Ladder Co.*, 183 F.3d 339, 342 (5th Cir. 1999). For a rare exception to this nearly universal principle of strict products liability, see *Controlled Atmosphere, Inc. v. Branom Instrument Co.*, 748 P.2d 686 (Wash. Ct. App. 1988).

81. See PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 2(a).

82. See *id.* § 3.

83. See John W. Wade, *Strict Tort Liability of Manufacturers*, 19 SW. L.J. 5, 14 (1965) (“[A] defective condition is easily understandable in the usual situation in which a particular article has something wrong with it. Because of a mistake in the manufacturing process, for example, the product was adulterated or one of its parts was broken or weakened or not properly attached . . .”); Richard G. Wilson, *Part II: The Protection of the Producing Enterprising Products Liability*, 43 CAL. L. REV. 809, 810 (1955).

liability for such defects.⁸⁴ If a plaintiff establishes a manufacturing defect from a commonsense perspective, and further proves that the manufacturer was responsible for the defect and that the defect injured the plaintiff, most defendants have no reason to contest the plaintiff's conception of manufacturing "defectiveness" such that, even today, most courts simply do not bother to define the term.⁸⁵

A. Departure from Design Specifications

1. Development of the Departure-from-Design Test

During the 1960s, although little attention was devoted to the issue, products liability scholars began to develop a formulation of the manufacturing defect concept that evolved in pragmatic terms into a departure from the manufacturer's intended design standards, a deviation from the maker's "blueprint" specifications.⁸⁶ Manufacturing defectiveness was defined in this logical manner in a prominent law review article published by Professor James Henderson in 1973,⁸⁷ and over the next couple of decades a scattering of courts picked up and repeated variations of this

84. See *Hewitt v. B.F. Goodrich Co.*, 732 F.2d 1554 (11th Cir. 1984) (involving a tire bead bundle that broke during manufacturing process); *Hall v. Chrysler Corp.*, 526 F.2d 350 (5th Cir. 1976) (involving a misrouted transmission cable on truck).

85. See *Bell v. T.R. Miller Mill Co. Inc.*, 768 So. 2d 953 (Ala. 2000) (involving a telephone pole made of rotten wood); *Sanders v. Hartville Milling Co.*, 14 S.W.3d 188, 200 (Mo. Ct. App. 2000) (involving toxins in animal feed).

86. See Page Keeton, *Products Liability—Liability Without Fault and the Requirement of a Defect*, 41 TEX. L. REV. 855, 859 (1963) ("a miscarriage in the manufacturing process" that made the product different from what "it was intended to be"); Ralph Nader & Joseph A. Page, *Automobile Design and the Judicial Process*, 55 CAL. L. REV. 645, 649 (1967); Roger J. Traynor, *The Ways and Meanings of Defective Products and Strict Liability*, 32 TENN. L. REV. 363, 367 (1965). Traynor noted:

A defective product may be defined as one that fails to match the average quality of like products, and the manufacturer is then liable for injuries resulting from deviations from the norm. . . . If a normal sample of defendant's product would not have injured plaintiff, but the peculiarities of the particular product did cause harm, the manufacturer is liable for injuries caused by this deviation.

Id.

On the departure-from-design-specification standard for defining manufacturing defects, see generally 2 AMERICAN LAW OF PRODUCTS LIABILITY 3D § 31:3 (1999); 2 FRUMER & FRIEDMAN, *supra* note 7, § 11.02[3][a]; 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 7:1; PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 2(a).

87. Henderson, *supra* note 1, at 1543.

Manufacturing flaws are imperfections that inevitably occur in a typically small percentage of products of a given design as a result of the fallibility of the manufacturing process. A flawed product does not conform in some significant aspect to the intended design, nor does it conform to the great majority of products manufactured in accordance with that design.

Id.

formulation,⁸⁸ a number of them relying for authority on Professor Henderson's article.⁸⁹

From the first draft of the first sections of the *Products Liability Restatement* in 1993,⁹⁰ manufacturing defect was defined in terms of "a departure from the product's intended design," and § 2 of the *Restatement* as eventually published in 1998 provides: "A product: (a) contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product"⁹¹ Since the American Law Institute's adoption of the departure-from-intended-design definition in the early 1990s, an increasing number of courts have used some form of this standard for defining manufacturing defectiveness,⁹² some relying expressly on § 2(a) of the

88. The cases almost all involved design defects where the definition of manufacturing defects was dictum. *See, e.g.,* Singleton v. Int'l Harvester Co., 685 F.2d 112, 115 (4th Cir. 1981) ("In manufacturing defect cases, the plaintiff proves that the product is defective by simply showing that it does not conform to the manufacturer's specifications."); Caterpillar Tractor Co. v. Beck, 593 P.2d 871, 881 (Alaska 1979) ("Under the 'deviation from the norm' test, the product is classified as defective because it does not match the quality of most similar products."); Barker v. Lull Eng'g Inc., 573 P.2d 443, 454 (Cal. 1978) ("[A] manufacturing or production defect is readily identifiable because a defective product is one that differs from the manufacturer's intended result or from other ostensibly identical units of the same product line."); Camacho v. Honda Motor Co., 741 P.2d 1240, 1247 (Colo. 1987) (noting "whether the product as produced conformed with the manufacturer's specifications"); Back v. Wickes Corp., 378 N.E.2d 964, 970 (Mass. 1978) ("[T]he jury might simply compare the propensities of the product as sold with those which the product's designer intended it to have and thereby reach a judgment as to whether the deviation from the design rendered the product unreasonably dangerous and therefore unfit for its ordinary purposes."); Prentis v. Yale Mfg. Co., 365 N.W.2d 176, 182 (Mich. 1984) ("[In manufacturing defect cases], the product may be evaluated against the manufacturer's own production standards, as manifested by that manufacturer's other like products."); Duke v. Gulf & W. Mfg. Co., 660 S.W.2d 404, 411 (Mo. Ct. App. 1983) ("[T]he jury can rather easily determine whether a single product conforms to the intended design."); Ford Motor Co. v. Pool, 688 S.W.2d 879, 881 (Tex. App. 1985) ("Manufacturing defect cases involve products which are flawed, i.e., which do not conform to the manufacturer's own specifications, and are not identical to their mass-produced siblings."), *rev'd in part on other grounds*, 715 S.W.2d 629 (Tex. 1986).

89. *See, e.g.,* Rix v. Gen. Motors Corp., 723 P.2d 195, 200 (Mont. 1986); Thibault v. Sears, Roebuck & Co., 395 A.2d 843, 846 (N.H. 1978); Caprara v. Chrysler Corp., 417 N.E.2d 545, 552 (N.Y. 1981) (dissenting opinion citing to article).

90. RESTATEMENT (THIRD) OF PRODUCTS LIABILITY § 101(2)(a) (Prelim. Draft No. 1, 1993). Professors Jim Henderson and Aaron Twerski were co-Reporters for this Restatement.

91. PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 2(a).

92. *See, e.g.,* Perez-Trujillo v. Volvo Car Corp., 137 F.3d 50, 53 (1st Cir. 1998) (holding that a manufacturing defect exists "if the product 'differs from manufacturer's intended result or from other ostensibly identical units of the same product line'" (quoting Santana v. Superior Packaging, Inc., No. RE-89-593, 1992 WL 754830, at *5 n.7 (P.R. Dec. 12, 1992); McKenzie v. S K Hand Tool Corp., 650 N.E.2d 612, 616 (Ill. App. Ct. 1995) (holding that a manufacturing defect was established "because the measurements of the parts of the wrench were shown not to comply with the manufacturer's specifications."); Allstate Ins. Co. v. Ford Motor Co., 772 So. 2d 339, 344 (La. Ct. App. 2000) (finding a defect if "product deviated in a material way from the manufacturer's specifications or performance standards for the product or from otherwise identical products manufactured by the same manufacturer.") (citing LA. REV. STAT. ANN. § 9:280055 (2001)); Wood

Restatement.⁹³ In addition, beginning with Washington in 1981,⁹⁴ several states have enacted statutes defining manufacturing defects by some formulation of the departure-from-design theme.⁹⁵ Mississippi's statute is the most concise, providing for liability if a product was "defective because it deviated in a material way from the manufacturer's specifications or from otherwise identical units manufactured to the same manufacturing specifications."⁹⁶ Under such a statute, at least one court has allowed the plaintiff to establish a manufacturing defect by circumstantial evidence that the product malfunctioned under circumstances suggesting that a defect in manufacture caused the malfunction.⁹⁷ On some basis or another, however, the plaintiff in a manufacturing defect case must prove the existence of a defect, that the product contained the defect at the time it left the defendant's control,⁹⁸ and that the defect caused the plaintiff's harm.⁹⁹ As mentioned earlier, many courts require

v. Old Trapper Taxi, 952 P.2d 1375, 1380 (Mont. 1997) (defining manufacturing defect as a "manufactured product [that] does not conform in some significant aspect to the intended design, nor does it conform to the majority of products manufactured in accordance with that design."); Miles v. Ford Motor Co., 922 S.W.2d 572, 585 (Tex. App. 1996), *rev'd in part on other grounds*, 967 S.W.2d 377 (Tex. 1998) (finding manufacturing defect if accident product "does not conform to the manufacturer's design standards [or] blueprints"); Morton Int'l v. Gillespie, 39 S.W.3d 651, 656 (Tex. App. 2001) (holding that "a plaintiff has a manufacturing defect claim when a finished product deviates, in terms of its construction or quality, from the specifications or planned output in a manner that renders it unreasonably dangerous"); Dico Tire, Inc., v. Cisneros, 953 S.W.2d 776, 783 (Tex. App. 1997) (holding that a manufacturing defect exists "when a product does not conform to the design standards and blueprints of the manufacturer and the flaw makes the product more dangerous and therefore unfit for its intended or foreseeable uses").

93. See *Hamilton v. Emerson Elec. Co.*, 133 F. Supp. 2d 360, 365 (M.D. Pa. 2001); *Warren v. K-Mart Corp.*, 765 So. 2d 235, 237-38 (Fla. Dist. Ct. App. 2000); *Myrlak v. Port Auth.*, 723 A.2d 45, 51 (N.J. 1999); *Spectron Dev. Lab. v. Am. Hollow Boring Co.*, 936 P.2d 852, 856 (N.M. Ct. App. 1997); *Parker v. St. Vincent Hosp.*, 919 P.2d 1104, 1108 (N.M. Ct. App. 1996).

94. WASH. REV. CODE ANN. § 7.72.030(2)(a) (West 1992) provides: "A product is not reasonably safe in construction if, when the product left the control of the manufacturer, the product deviated in some material way from the design specifications or performance standards of the manufacturer, or deviated in some material way from otherwise identical units of the same product line."

95. See LA. REV. STAT. ANN. § 9:2800.55 (West 1997); N.J. STAT. ANN. § 2A:58C-2 (West 2000); OHIO REV. CODE ANN. § 2307.74 (West 2001).

96. MISS. CODE ANN. § 11-1-63(a)(i)(1) (1972).

97. See *Jurls v. Ford Motor Co.*, 752 So. 2d 260, 265-66 (La. Ct. App. 2000) (explaining in a 3-2 decision that even under deviation-from-specifications statutory definition, product malfunction entitled plaintiff to jury consideration of manufacturing defect on basis of *res ipsa loquitur*).

98. See, e.g., *Hamilton*, 133 F. Supp. 2d at 377-78 (granting summary judgment for manufacturer because plaintiff failed to prove that defect in miter saw's braking device was present when saw left manufacturer). Cf. *Wood v. Old Trapper Taxi*, 952 P.2d 1375, 1380-81 (Mont. 1997) (involving collapse of radio tower manufactured three decades earlier; evidence that manufacturing defect in tower was present before it left manufacturer, though weak, was sufficient).

99. *Dico Tire, Inc. v. Cisneros*, 953 S.W.2d 776, 783 (Tex. App. 1997) ("To recover for a manufacturing defect, the plaintiff must show a manufacturing flaw which renders the product unreasonably dangerous, that the defect existed at the time the product left the seller, and that the defect was the producing cause of the plaintiff's injuries."). Accord, *Wood*, 952 P.2d at 1379

such proof by expert testimony.¹⁰⁰

One of the few reported decisions explicitly applying a deviation-from-design-specifications standard is *McKenzie v. S K Hand Tool Corp.*¹⁰¹ While using a three-quarter inch ratchet wrench, the parts of which were held together by a snap ring, the plaintiff was injured when the wrench came apart causing him to fall upon the floor.¹⁰² In an action against the wrench manufacturer, the plaintiff's expert theorized that the snap ring failed because of defective manufacture in both (1) the hardness of the snap ring, and (2) the diameter of the wrench handle groove in which the ring was seated.¹⁰³ The manufacturer's blueprints contained specifications for the sizes of each component of the wrench together with specific tolerances (upper and lower limits) for each measurement.¹⁰⁴ Each particular wrench was considered acceptable if its particular measurements fit within the tolerance limits, and if any measurement fell outside the upper or lower limits, the machinist knew that the part was unacceptable.¹⁰⁵ As for the ring's hardness, the specifications called for a measurement of 48-52 on the Rockwell C scale, whereas the accident-wrench ring measurements ranged (in various places) from 45-51. As for the diameter of the handle groove, the specifications called for 2.290 inches, with a tolerance of .005 inches, providing an acceptable range of 2.285-2.295 inches. However, the diameter of the groove on the accident wrench measured appreciably larger, between 2.3125-2.3130 inches.¹⁰⁶ Concluding that the evidence was relevant to defectiveness and causation, and that the trial court's exclusion of it therefore was erroneous, the *McKenzie* court ruled that the plaintiff had established a prima facie case of manufacturing defectiveness.¹⁰⁷

(explaining that "[t]he defect [must be] traceable to the defendant").

On the requirement of causation, see, for example, *Stewart v. Von Solbrig Hosp., Inc.*, 321 N.E.2d 428, 432 (Ill. App. Ct. 1974), which involved a defective stainless steel surgical pin implanted in plaintiff's leg. The pin was not designed to withstand weight of person and when plaintiff walked on leg contrary to doctor's orders, the pin broke. *Id.* at 430. The court found that the pin would have broken even if it had not contained manufacturing defects which reduced its strength by one-third. *Id.* at 432. See also *Lucas v. Texas Indus.*, 696 S.W.2d 372, 378 (Tex. 1985) (involving a concrete beam which was manufactured with one-inch inserts rather than the one and one-quarter inch inserts specified in plans and which fell on plaintiff while being lifted with one and one-quarter inch lifting equipment; no evidence that beam's failure to be manufactured to specifications caused the danger or, by implication, the harm). On causation generally, see 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, §§ 12:1, 13:1.

100. See, e.g., *Moisenko v. Volkswagenwerk Aktiengesellschaft*, 100 F. Supp. 2d 489, 493 (W.D. Mich. 2000) (requiring proof of manufacturing defect by expert testimony); see also *Pipitone v. Biomatrix, Inc.*, No. Civ. A. 00-1449, 2001 WL 568611 (E.D. La. May 22, 2001) (same).

101. 650 N.E.2d 612 (Ill. App. Ct. 1995).

102. *Id.* at 614.

103. *Id.* at 615-16.

104. *Id.* at 614-15.

105. *Id.* at 615.

106. *Id.* at 617.

107. *McKenzie*, 650 N.E.2d at 619.

There are many slight variations in how courts and legislatures define the deviation-from-specification liability standard, although all mean essentially the same thing.¹⁰⁸ A possible benefit of the *Products Liability Restatement* formulation in departure-from-intended-design terms is that it provides a sound basis upon which the liability test's formulation may begin to standardize.¹⁰⁹ Any such standard of course must allow for tolerances within which a product may be considered nondefective, as the tolerances mentioned above in *McKenzie* illustrate, since absolute perfection is not possible (because of limitations of science and technology), nor desirable (because of cost), nor necessary (for accident prevention). A straight-forward departure-from-design-standard definition occasionally may fail to capture a product hazard that properly should be considered a manufacturing defect, such that the normal definition from time to time may need to be supplemented in some respect. And most courts will certainly want to allow manufacturing defects to be established by the malfunction doctrine¹¹⁰ and possibly by other forms of proof.¹¹¹ But courts should have little difficulty handling such special situations as they arise, and, for the bulk of manufacturing defect cases, it may safely be predicted that courts increasingly will define manufacturing defect in terms of departure from design specifications.

2. *Methods of Proof; Ethical Implications*

The statutes and several judicial decisions mentioned above explicitly provide a two-pronged definition of manufacturing defect which allows a plaintiff to establish defectiveness by either of two alternative methods of proof: comparing the accident-product unit to the manufacturer's formal design specifications *or* to the dimensions and other parameters of some otherwise identical product. The result of either form of proof should be essentially the same, of course, for the two approaches provide alternative routes to the same destination—a determination of

108. Definitions vary over time even in the same jurisdiction. Compare *Morton Int'l v. Gillespie*, 39 S.W.3d 651, 656 (Tex. App. 2001) (“[A] plaintiff has a manufacturing defect claim when a finished product deviates, in terms of its construction or quality, from the specifications or planned output in a manner that renders it unreasonably dangerous.”), with *Dico Tire, Inc. v. Cisneros*, 953 S.W.2d 776, 783 (Tex. App. 1997) (“A manufacturing defect exists when a product does not conform to the design standards and blueprints of the manufacturer and the flaw makes the product more dangerous and therefore unfit for its intended or foreseeable uses.”).

109. The adoption of the standard by a number of courts suggests that this process has begun. See *supra* note 1. However, it should be noted that the *Products Liability Restatement* itself appears unconcerned with uniformity of terminology. See *PRODUCTS LIABILITY RESTATEMENT*, *supra* note 7, § 2(a) cmt. c (restating § 2(a) as meaning “a manufacturing defect is a departure from a product unit's design specifications”).

110. See *Jurls v. Ford Motor Co.*, 752 So. 2d 260, 265-66 (La. Ct. App. 2000) (3-2 decision). On the malfunction doctrine generally, see *infra* Part III.B.

111. See, e.g., *Magnuson v. Kelsey-Hayes Co.*, 844 S.W.2d 448, 455 (Mo. Ct. App. 1992) (stating that “a showing of non-conformity to design . . . is illustrative of one form of proof which may be presented”).

whether the product in question was produced or assembled in a manner contrary to the manufacturer's intentions.

Permitting a plaintiff to establish an accident-product's defectiveness simply by comparing its characteristics to those of a like product unit found on a retailer's shelf¹¹² has interesting practical and ethical implications. As a practical matter, this liability standard means that the defectiveness of an accident product often may be determined prior to filing a lawsuit. The plaintiff's expert, after locating another product unit of the same make and model, may simply compare and contrast the two products to ascertain whether the accident is fairly traceable to some physical difference between the two product units resulting from some variation in the production process. In some cases, no doubt, an expert will be unable to reliably determine defectiveness or causation simply by comparing two product units.¹¹³ Oftentimes, however, a simple comparative analysis will provide a firm basis for determining whether a product accident in fact was caused by a flaw in manufacture.

Certain strategic and ethical implications spring from this ready availability of a relatively simple test of manufacturing defectiveness. In particular, it would seem that plaintiffs' attorneys handling manufacturing defect cases must seek to obtain such comparative analyses prior to filing suit.¹¹⁴ Similarly, once defense counsel gain access to accident products in manufacturing defect cases, they must compare those product units to the manufacturer's design specifications and conform the defense of such cases to the results of those comparisons.

B. Product Malfunction

1. Nature of Doctrine

In modern products liability litigation, it is axiomatic that a plaintiff normally must prove that a product was defective, that the product contained the defect when it left the defendant's control, and that the defect proximately caused the plaintiff's harm.¹¹⁵ A plaintiff who fails to establish each of these elements by a preponderance of the evidence fails to make a *prima facie* case.¹¹⁶ If a manufacturing defect causes

112. Literally or metaphorically.

113. For example, in the *McKenzie* case discussed above, the measurements were so precise that a reliable defectiveness determination may have been possible only because the experts were able to compare the measurements of the accident product against the measurements and tolerances actually specified by the manufacturer. *McKenzie*, 650 N.E.2d at 614-15.

114. See FED. R. CIV. P. 11.

115. See *Myrlak v. Port Auth.*, 723 A.2d 45, 52 (N.J. 1999); *Davis v. Berwind Corp.*, 690 A.2d 186, 190 (Pa. 1997); see also *Rone v. Sharp Elec. Corp.*, No. C.N.A. 98-2560-GTV, 2000 WL 133822, at *2 (D. Kan. Jan. 14, 2000); WILLIAM L. PROSSER, *THE LAW OF TORTS* § 103, at 671-72 (4th ed. 1971).

116. This is certainly true for strict liability in tort. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:3. It is also generally true as well for negligence and breach of the implied warranty of merchantability. See, e.g., *Riley v. De'Longhi Corp.*, No. 99-2305, 2000 WL

a product accident, usually the plaintiff can prove the defect and its causal relation to both the manufacturer and the accident largely by direct evidence—as by testimony from an expert that the product contained an identifiable production flaw, deviating from design specifications, that caused the product to fail in a particular manner.¹¹⁷ Sometimes, however, a product may malfunction under circumstances suggesting a manufacturing defect (or possibly a design defect)¹¹⁸ but without leaving any direct physical evidence as to how or why, specifically, the product failed to operate properly. In such cases, the absence of direct evidence of product defectiveness and causation hampers a plaintiff's efforts to establish a *prima facie* products liability case.

In negligence law, if the specific cause of a product malfunction is unknown, the doctrine of *res ipsa loquitur* allows a jury to infer the manufacturer's negligence when the circumstances of the accident suggest that the product was negligently manufactured or designed. However, because the *res ipsa* doctrine is designed to establish a defendant's *negligence* rather than a product's *defectiveness*, most courts consider the *res ipsa* doctrine technically inapplicable to strict liability in tort or breach of warranty, both of which are unconcerned with a defendant's conduct.¹¹⁹ Although not entirely necessary,¹²⁰ the courts, in an effort to maintain a fundamental distinction between negligence and strict liability, began at an early date to tailor

1690183, at **2 (4th Cir., Oct. 30, 2000) (noting that requirements apply to strict liability, negligence, and breach of warranty).

117. See *supra* Part III.A.

118. See PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 cmt. b. However, the malfunction “doctrine is ill-suited to cases involving defective design for failure to include a safety device.” *Dancy v. Hyster Co.*, 127 F.3d 649, 653 (8th Cir. 1997).

119. See, e.g., *Myrlak*, 723 A.2d at 53 (“*Res ipsa loquitur* is a doctrine created under the fault theory of negligence as a means of circumstantially proving a defendant's lack of due care. Strict products liability, on the other hand, is a theory of liability based upon allocating responsibility regardless of a defendant's unreasonableness, negligence, or fault.”). This is the majority rule. See also *O'Connor v. Gen. Motors Corp.*, No. CV 89028104, 1997 WL 792996, at *3 (Conn. Super. Ct. Apr. 25, 1997) (“*Res ipsa loquitur* relates to cases involving negligence and has no application to cases where a strict liability theory is advanced.”); *Tresham v. Ford Motor Co.*, 79 Cal. Rptr. 883, 886 (Ct. App. 1969) (“When a party relies on the rule of *strict liability* the requirement of showing a defect cannot be satisfied by reliance on the doctrine of *res ipsa loquitur*.”). On the relationship between *res ipsa loquitur* and the malfunction doctrine, see *Cassisi v. Maytag Co.*, 396 So. 2d 1140, 1143 (Fla. Dist. Ct. App. 1981).

A couple of courts allow plaintiffs to use *res ipsa* to establish defectiveness for purposes of strict products liability. See *Jurls v. Ford Motor Co.*, 752 So. 2d 260, 265 (La. Ct. App. 2000) (explaining that *res ipsa* may be used to establish liability under statute defining manufacturing defect as a deviation from manufacturer's design specifications).

120. Unnecessary because a negligence claim requires proof of each element of a strict products liability claim, including defectiveness, plus the additional element of fault. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, §§ 2:1, 5.9. Thus, proof of a manufacturer's negligence under *res ipsa* logically includes within itself proof that the product was defective.

principles similar to those that underlie *res ipsa loquitur*¹²¹ into a separate doctrine for proving claims in strict products liability.¹²² Dubbed the “malfunction theory,”¹²³ these special principles of circumstantial evidence now provide a widely accepted means for proving defectiveness in cases where direct evidence of defectiveness is unavailable.¹²⁴

Under the malfunction doctrine, a plaintiff may establish a prima facie case of product defect by proving that the product failed in normal use under circumstances suggesting a product defect. Put otherwise, a product defect may be inferred by circumstantial evidence that (1) the product malfunctioned, (2) the malfunction occurred during proper use, and (3) the product had not been altered or misused in a manner that probably caused the malfunction. The malfunction doctrine may be described less formally as providing that a plaintiff need not establish that a specific defect caused an accident if circumstantial evidence permits an inference that the

121. “Strictly speaking, since proof of negligence is not in issue, *res ipsa loquitur* has no application to strict liability; but the inferences which are the core of the doctrine remain, and are no less applicable.” PROSSER, *supra* note 115, § 103, at 672-73.

122. See *Greco v. Bucciconi Eng'g Co.*, 283 F. Supp. 978, 982 (W.D.Pa. 1967), *aff'd*, 407 F.2d 87 (3d Cir. 1969); *Marathon Battery Co. v. Kilpatrick*, 418 P.2d 900, 911 (Okla. 1965); *MacDougall v. Ford Motor Co.*, 257 A.2d 676, 679 (Pa. Super. Ct. 1969). For the doctrine's even earlier warranty law basis, see PROSSER, *supra* note 115, § 103.

123. It is so called in several jurisdictions, including Pennsylvania which has the most developed jurisprudence on this doctrine. See, e.g., *Rogers v. Johnson & Johnson Prods., Inc.*, 565 A.2d 751, 753 (Pa. 1989); *Kuisis v. Baldwin-Lima-Hamilton Corp.*, 319 A.2d 914, 920 (Pa. 1974); *Dansak v. Cameron Coca-Cola Bottling Co.*, 703 A.2d 489, 495 (Pa. Super. Ct. 1997); *Ducko v. Chrysler Motors Corp.*, 639 A.2d 1204, 1205 (Pa. Super. Ct. 1994); *Troy v. Kampgrounds of Am., Inc.*, 581 A.2d 665, 668 (Pa. Super. Ct. 1990).

A few courts refer to it as the “indeterminate defect theory,” reflecting the fact that the doctrine applies when the circumstances surrounding an accident suggest a product defect but no direct evidence of a specific defect is available. See *Riley v. De'Longhi Corp.*, No. 99-2305, 2000 WL 1690183, at *2 (4th Cir., Oct. 30, 2000); *Myrlak*, 723 A.2d at 55-56. The doctrine is also sometimes referred to as the “general defect” theory. See *Corcoran v. Gen. Motors Corp.*, 81 F. Supp. 2d 55, 66 (D.D.C. 2000). Without assigning a particular name to the doctrine, most courts refer to it simply as a principle of circumstantial evidence.

124. See generally 1 AMERICAN LAW OF PRODUCTS LIABILITY 3D §§ 3:13, 17:68, 31:19-31:28 (1999); 1 FRUMER & FRIEDMAN, *supra* note 7, §§ 8.06, 22.09 (discussing the general defect or malfunction theory); Jonathan M. Hoffman, *Res Ipsa Loquitur and Indeterminate Product Defects: If They Speak for Themselves, What Are They Saying?*, 36 S. TEX. L. REV. 353 (1995) (discussing the plaintiff's burden of proof in product liability *res ipsa* cases); Gary T. Schwartz, *New Products, Old Products, Evolving Law, Retroactive Law*, 58 N.Y.U. L. REV. 796, 828 (1983) (discussing the “malfunction theory”); Mathew R. Johnson, Note, *Rolling the “Barrel” a Little Further: Allowing Res Ipsa Loquitur to Assist in Proving Strict Liability in Tort Manufacturing Defects*, 38 WM. & MARY L. REV. 1197 (1997) (discussing *res ipsa* and manufacturing defects); *Malfunction Theory*, Prod. Liab. Rep. (CCH) ¶ 1740 (discussing cases analyzing malfunction theory); Christopher H. Hall, Annotation, *Strict Products Liability: Malfunction or Occurrence of Accident as Evidence of Defect*, 65 A.L.R. 4th 346 (1988) (examining the malfunction doctrine); PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 (same).

product, in one way or another, probably was defective.¹²⁵

Since normal products liability doctrine requires a plaintiff to establish that a product was defective and that the defect caused his harm, requiring a plaintiff to prove that a specific defect caused the accident might appear to make good sense. But the very purpose of the malfunction doctrine is to allow a plaintiff to prove a case by circumstantial evidence when there simply is no direct evidence of precisely how or why the product failed.¹²⁶ Sometimes the specific cause of a malfunction disappears in the accident when the product blows up, burns up, is otherwise severely damaged, or is thereafter lost.¹²⁷ Not infrequently, however, products simply malfunction, and mysteriously so, leaving no tangible trace of how or why they failed. In all such situations, where direct evidence is unavailable, the courts have properly refused to require the plaintiff to prove what specific defect caused the product to malfunction.¹²⁸

Because the malfunction doctrine is merely a principle of circumstantial evidence rather than a formal definition of what constitutes a manufacturing defect, the doctrine is logically compatible with a definition of manufacturing defect in terms of a departure from the manufacturer's design specifications.¹²⁹

125. "The inference of defect may be drawn under this Section without proof of the specific defect. Furthermore, quite apart from the question of what type of defect was involved, the plaintiff need not explain specifically what constituent part of the product failed." PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 cmt. c.

126. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 8:3.

127. The loss of a product that is the subject of a products liability action raises issues of "spoliation" of evidence. See *Torres v. Matsushita Elec. Corp.*, 762 So. 2d 1014, 1017 (Fla. Dist. Ct. App. 2000); *Tracy v. Cottrell*, 524 S.E.2d 879, 887-90 (W. Va. 1999); *Dansak*, 703 A.2d at 494; see generally MARGARET M. KOESEL ET AL., *SPOILIATION OF EVIDENCE: SANCTIONS AND REMEDIES FOR DESTRUCTION OF EVIDENCE IN CIVIL LITIGATION* (Daniel F. Gourush ed., 2000) (discussing the problem of spoliation in civil litigation); 2 MCCORMACK ON EVIDENCE §§ 264-65 (John W. Strong ed., 1999) (explaining when an inference may be drawn against a plaintiff for failure to provide evidence); 2 JOHN HENRY WIGMORE, *EVIDENCE IN TRIALS AT COMMON LAW* §§ 277-81 (James H. Chadbaurn, ed. 1979) (noting that the claimant's spoliation of evidence suggests an unfounded case); Laurie Kindel & Kari Richter, *Spoliation of Evidence: Will the New Millennium See a Further Expansion of Sanctions for the Improper Destruction of Evidence?*, 27 WM. MITCHELL L. REV. 687 (2000) (discussing spoliation of evidence in products liability); Michael L. Volin, *You Have No Evidence But You May Still Have a Case: The New Products Liability Spoliation Doctrine*, 69 PA. BAR ASS'N Q. 129 (1998) (same); W. Russell Welsh & Andrew C. Marquardt, *Spoliation of Evidence*, 23 BRIEF 9 (1994) (same); Phoebe L. McGlynn, Note, *Spoliation in the Product Liability Context*, 27 U. MEM. L. REV. 663 (1997) (same); Phillip Earl Wilson, Jr., Comment, *Doctrinal Malfunction—Spoliation and Products Liability Law in Pennsylvania*, 69 TEMP. L. REV. 899 (1996) (same).

128. See, e.g., *Stackiewicz v. Nissan Motor Corp. in U.S.A.*, 686 P.2d 925, 927 (Nev. 1984); *MacDougall v. Ford Motor Co.*, 257 A.2d 676, 680 (Pa. Super. Ct. 1969).

129. See *Jurls v. Ford Motor Co.*, 752 So. 2d 260, 265-66 (La. Ct. App. 2000) (3-2 decision) (relying on the deviation-from-specifications statutory definition of manufacturing defect and holding that proof of product malfunction entitled plaintiff to jury determination of manufacturing defect on basis of *res ipsa*).

2. *Applicability*

The malfunction doctrine is frequently applied to cases involving cars and other automotive vehicles. In *Ducko v. Chrysler Motors Corp.*,¹³⁰ for example, the plaintiff was driving a new car¹³¹ on a dry road at fifty-five mph when the car suddenly jerked to the right, the steering locked, and the brakes failed to respond. The car crashed, and the plaintiff broke her back. No specific defect could be found in the vehicle. The plaintiffs' expert concluded that the accident was caused by a transient malfunction of the power system for the steering and brakes, whereas Chrysler's expert postulated that the accident resulted from driver error. Because the plaintiff could not prove the specific defect that caused the crash, the trial court entered summary judgment for the defendant.¹³² Based on the malfunction doctrine, the superior court reversed and remanded for trial, holding that a plaintiff need not establish a specific defect to prove a manufacturing defect but may establish a case-in-chief by proving (1) that the product malfunctioned, and (2) the absence of likely causes other than product defect.¹³³ Because circumstantial evidence of this type would permit a jury to infer that the product probably was defective at the time of sale,¹³⁴ the trial court's grant of summary judgment to Chrysler improperly precluded the jury from determining the cause of the accident—whether driver error or, based on the plaintiff's testimony of steering and braking problems, some defect in the car.¹³⁵

In addition to cases like *Ducko* that involve the sudden failure of a vehicle's steering¹³⁶ or brakes,¹³⁷ courts have applied the malfunction doctrine to other

130. 639 A.2d 1204 (Pa. Super. Ct. 1994).

131. The car had been driven 1,655 miles since its purchase less than two months earlier. *Id.* at 1205.

132. *Id.*

133. *Id.* The Pennsylvania courts characterize such alternative likely causes as "abnormal use or reasonable, secondary causes for the malfunction." *See id.* (quoting *O'Neill v. Checkers Motors Corp.*, 567 A.2d 680, 682 (Pa. 1989)).

134. *See id.*

135. *Id.* at 1207.

Mrs. Ducko's testimony of the erratic performance of the vehicle's steering and braking systems, under the circumstances of this case, was sufficient to make out a prima facie case of a manufacturing defect in the vehicle. The issue of strict liability, therefore, was a disputed issue for the jury. Although a jury, after considering the testimony of appellee's expert witnesses, may find that the vehicle was not defective and that the accident was caused by operator error, it was improper for the trial court to make such a determination summarily and as a matter of law.

Id.

136. *See, e.g.,* *Stewart v. Ford Motor Co.*, 553 F.2d 130 (D.C. App. 1977) (involving vehicle that was twelve days old and had 1,400 miles); *Stewart v. Budget Rent-A-Car Corp.*, 470 P.2d 240 (Haw. 1970) (involving vehicle with 2,829 miles); *Farmer v. Int'l Harvester Co.*, 553 P.2d 1306 (Idaho 1976) (involving truck with 116,000 miles); *Millette v. Radosta*, 404 N.E.2d 823 (Ill. App. Ct. 1980) (involving vehicle that had 11,000 miles); *Hunt v. Ford Motor Co.*, 341 So. 2d 614 (La. Ct. App.

automotive cases in which a vehicle inexplicably accelerates,¹³⁸ changes gears,¹³⁹ catches fire,¹⁴⁰ or rolls over,¹⁴¹ in which a tire fails,¹⁴² or in which an air bag fails to deploy,¹⁴³ deploys improperly,¹⁴⁴ or spews acid on an occupant.¹⁴⁵ In addition to automobiles, the doctrine has been applied to malfunctions of a wide range of other products, as when a bottle of soda pop,¹⁴⁶ a glass baby bottle,¹⁴⁷ an aerosol can of

1977) (involving a steering wheel malfunction); *Stackiewicz v. Nissan Motor Corp. in U.S.A.*, 686 P.2d 925 (Nev. 1984) (involving steering on an automobile with 2,400 total miles that suddenly locked; routine maintenance performed at 1,000 miles); *Moraca v. Ford Motor Co.*, 332 A.2d 599 (N.J. 1975) (involving vehicle with 11,000 miles); *Caprara v. Chrysler Corp.*, 423 N.Y.S.2d 694 (App. Div. 1979), *aff'd on other grounds*, 417 N.E.2d 545 (N.Y. 1981) (involving steering that seized up at twenty-five mph); *MacDougall v. Ford Motor Co.*, 257 A.2d 676 (Pa. Super. Ct. 1969) (involving a vehicle that was less than one month old and had 143 miles).

137. *See, e.g.*, *Tweedy v. Wright Ford Sales, Inc.*, 357 N.E.2d 449, 450 (Ill. 1976) (involving brakes that failed at 7,500 miles); *Joseph v. Bohn Ford, Inc.*, 483 So. 2d 934, 937 (La. 1986) (involving brakes worn at 7,716 miles); *Snider v. Bob Thibodeau Ford, Inc.*, 202 N.W.2d 727, 731 (Mich. Ct. App. 1972) (involving eight separate occasions when brakes failed in a truck); *Vernon v. Stash*, 532 A.2d 441 (Pa. Super. Ct. 1987) (involving a failed parking brake); *Darryl v. Ford Motor Co.*, 440 S.W.2d 630, 632 (Tex. 1969) (involving brakes that failed on a truck that was three months old and had 600-700 miles).

138. *See, e.g.*, *Wakabayashi v. Hertz Corp.*, 660 P.2d 1309, 1311 (Haw. 1983) (involving a car that is one and a half years old and driven 22,577 miles); *Phipps v. Gen. Motors Corp.*, 363 A.2d 955, 956 (Md. 1976) (involving an accelerator that stuck without warning); *see also Jurls v. Ford Motor Co.*, 752 So. 2d 260, 262 (La. Ct. App. 2000) (involving a cruise control that apparently failed to disengage).

139. *See, e.g.*, *Harrell Motors, Inc. v. Flanery*, 612 S.W.2d 727 (Ark. 1981) (involving a defective transmission); *Williams v. Deere & Co.*, 598 S.W.2d 609 (Mo. App. 1980) (involving a two year old tractor); *see also O'Connor v. Gen. Motors Corp.*, No. CV-89-028104, 1997 WL 792996, at *1 (Conn. Super. Ct. Apr. 25, 1997) (involving a truck that lurched when ignition turned on).

140. *See, e.g.*, *Hall v. Gen. Motors Corp.*, No. 91-36053, 1993 WL 410692, at *2 (9th Cir. Oct. 15, 1993) (involving a vehicle that caught fire); *Hinckley v. La Mesa R.V. Ctr., Inc.*, 205 Cal. Rptr. 22, 23 (Ct. App. 1984) (same); *Cincinnati Ins. Co. v. Volkswagen of Am., Inc.*, 502 N.E.2d 651, 653 (Ohio App. 1985) (same); *Anderson v. Chrysler Corp.*, 403 S.E.2d 189, 191 (W. Va. 1991) (same).

141. *See, e.g.*, *Perkins v. Trailco Mfg. & Sales Co.*, 613 S.W.2d 855, 857 (Ky. 1981) (involving new dump truck that was properly used and maintained which overturned).

142. *See Taylor v. Cooper Tire & Rubber Co.*, 130 F.3d 1395, 1396 (10th Cir. 1997); *Colboch v. Uniroyal Tire Co.*, 670 N.E.2d 1366, 1368 (Ohio Ct. App. 1996).

143. *See Silvestri v. Gen. Motors Corp.*, 210 F.3d 240, 242 (4th Cir. 2000).

144. *See Perez-Trujillo v. Volvo Car Corp. (Swed.)*, 137 F.3d 50, 51 (1st Cir. 1998).

145. *See McEneaney v. Haywood*, 687 N.Y.S.2d 547, 548 (App. Div. 1999).

146. *See, e.g.*, *Embs v. Pepsi-Cola Bottling Co.*, 528 S.W.2d 703 (Ky. Ct. App. 1975) (involving exploding bottle of soda); *Robertson v. Gulf S. Beverage, Inc.*, 421 So. 2d 877 (La. 1982) (same); *Lee v. Crookston Coca-Cola Bottling Co.*, 188 N.W.2d 426, 429 (Minn. 1971) (same); *Dansak v. Cameron Coca-Cola Bottling Co.*, 703 A.2d 489, 491 (Pa. Super. Ct. 1997) (same).

147. *See Patterson v. Foster Forbes Glass Co.*, 674 S.W.2d 599, 609 (Mo. Ct. App. 1984).

paint,¹⁴⁸ a transformer,¹⁴⁹ a gas grill,¹⁵⁰ a propane fuel canister,¹⁵¹ or an oxygen tank's glass humidifier¹⁵² explodes; an automatic coffee maker's glass carafe,¹⁵³ a bottle of ketchup,¹⁵⁴ a jar of peanuts,¹⁵⁵ or a silicone breast implant¹⁵⁶ breaks apart; a television,¹⁵⁷ a clothes dryer,¹⁵⁸ a portable heater,¹⁵⁹ or an electric blanket¹⁶⁰ catches fire; a crutch,¹⁶¹ a grain auger,¹⁶² a football helmet,¹⁶³ or a ladder collapses;¹⁶⁴ a crane drops a load;¹⁶⁵ the blade guard of a power circular saw fails

148. See *Van Zee v. Bayview Hardware Store*, 74 Cal. Rptr. 21, 24 (Ct. App. 1968).

149. See *Bich v. Gen. Elec. Co.*, 614 P.2d 1323, 1326 (Wash. Ct. App. 1980).

150. See *Adkins v. K-Mart Corp.*, 511 S.E.2d 840, 843 (W. Va. 1998).

151. See *Eaton Corp. v. Wright*, 375 A.2d 1122, 1125 (Md. 1977).

152. See *James v. Keefe & Keefe, Inc.*, 377 N.Y.S.2d 991 (App. Div. 1975).

153. See *Rizzo v. Corning Inc.*, 105 F.3d 338 (7th Cir. 1997). In *Rizzo*, Judge Posner opined: A carafe designed to be used for years, not months, breaks in half without being dropped or banged or cleaned with abrasive cleansers or damaged in a flood or fire. In these unusual circumstances the accident itself is sufficient evidence of a defect to permit, though of course not compel, the jury to infer a defect. Whether these *were* the circumstances of the accident was a jury question.

Id. at 343.

154. See *Powers v. Hunt-Wesson Foods, Inc.*, 219 N.W.2d 393, 394 (Wis. 1974).

155. See *Welge v. Planters Lifesavers Co.*, 17 F.3d 209, 210 (7th Cir. 1994) (Posner, C.J.).

156. See *Baxter Healthcare Corp. v. Grimes*, No. 05-95-01682-CV, 1998 WL 548729, at *1 (Tex. App. Aug. 31, 1998).

157. See, e.g., *Rone v. Sharp Elec. Corp.*, No. 98-2560-6TV, 2000 WL 133822, at *1 (D. Kan. Jan. 14, 2000); *Union Ins. Co. v. RCA Corp.*, 724 P.2d 80, 81-82 (Colo. Ct. App. 1986); *Liberty Mut. Ins. Co. v. Sears, Roebuck & Co.*, 406 A.2d 1254, 1255 (Conn. Super. Ct. 1979); *Fain v. GTE Sylvania, Inc.*, 652 S.W.2d 163, 164 (Mo. Ct. App. 1983); *Bombardi v. Pochel's Appliance & TV Co.*, 518 P.2d 202, 203 (Wash. Ct. App. 1973).

158. See *Weir v. Federal Ins. Co.*, 811 F.2d 1387, 1389 (10th Cir. 1987) (Colo. law); *Cassisi v. Maytag Co.*, 396 So. 2d 1140, 1143 (Fla. Dist. Ct. App. 1981).

159. See *Riley v. De'Longhi Corp.*, No. 99-2305, 2000 WL 1690183, at *2 (4th Cir. Oct. 30, 2000) (Md. law); *Pearson Constr. Corp. v. Intertherm, Inc.*, 566 P.2d 575 (Wash. App. 1977).

160. See, e.g., *Henderson v. Sunbeam Corp.*, No. 95-6391, 1995 WL 39022 (10th Cir. Feb. 1, 1995) (involving fire allegedly caused by an electric blanket); *Watson v. Sunbeam Corp.*, 816 F. Supp. 384 (D. Md. 1993) (same).

161. See, e.g., *Varady v. Guardian Co.*, 506 N.E.2d 708, 712 (Ill. Ct. App. 1987) (involving a crutch that "failed to perform in the manner reasonably expected").

162. See, e.g., *Thudium v. Allied Prod. Corp.*, 36 F.3d 767 (8th Cir. 1994) (involving an allegedly defective grain auger).

163. See, e.g., *Rawlings Sporting Goods Co. v. Daniels*, 619 S.W.2d 435 (Tex. Civ. App. 1981) (involving a football helmet that collapsed after contact and injured plaintiff).

164. See, e.g., *Gillespie v. R.D. Werner Co.*, 375 N.E.2d 1294 (Ill. 1978) (involving a ladder that "failed").

165. See, e.g., *Kuisis v. Baldwin-Lima-Hamilton Corp.*, 319 A.2d 914 (Pa. 1974) (involving a brake-locking mechanism that failed).

to close;¹⁶⁶ a staple gun fires a staple;¹⁶⁷ a winch cable snaps;¹⁶⁸ and many other situations in which products have inexplicably malfunctioned.¹⁶⁹

3. *Limitations and Effect*

While courts have applied the malfunction doctrine in many cases to help plaintiffs get to the jury when evidence of a specific defect is unavailable, plaintiffs have lost many other cases in which they have relied unreasonably upon this type of circumstantial proof.¹⁷⁰ The doctrine presents a seductive but faulty shelter for plaintiffs with insufficient proof of defect and causation, and the law reports brim with decisions that recite the propriety of the doctrine as a general proposition but hold it inapplicable to the facts.¹⁷¹ The opinions in such cases frequently note that, while the malfunction doctrine provides a method for plaintiffs in proper cases to establish defectiveness and causation, the law will not allow plaintiffs or juries to rely on guess, conjecture, or speculation.¹⁷²

Although the malfunction doctrine may come to a plaintiff's rescue when circumstances fairly suggest the responsibility of a product defect, it is hornbook law that proof of a product accident alone proves neither defectiveness nor causation.¹⁷³ Nor does further proof that the accident was caused by a malfunction suffice to prove these elements. The crucial additional showing required of a plaintiff in a malfunction case is the negation of causes for the malfunction other than a product defect.

While malfunctions are sometimes caused by defects for which the manufacturer is responsible, product failures also result from improper treatment of products by users and repairers, and many products eventually simply wear out from a long and possibly rugged life. Tires, for example, when worn enough, will eventually blow out. Thus, if the plaintiff fails to show that he used the product

166. See, e.g., *Skil Corp. v. Lugsdin*, 309 S.E.2d 921, 924 (Ga. App. 1983) (relying on expert testimony to find defect in blade guard); *Agostino v. Rockwell Mfg. Co.*, 345 A.2d 735, 740 (Pa. Super. Ct. 1975) (finding sufficient evidence for jury to establish "defective" blade guard).

167. See *Senco Prods., Inc. v. Riley*, 434 N.E.2d 561, 563 (Ind. App. 1982).

168. See *Lachney v. Motor Parts & Bearing Supply, Inc.*, 357 So. 2d 1277, 1278-79 (La. Ct. App. 1978).

169. See, e.g., *Dietz v. Waller*, 685 P.2d 744, 748 (Ariz. 1984) (involving a new speed boat that "disintegrated" at high speed during normal operation); *Marquez v. City Stores Co.*, 371 So. 2d 810, 811 (La. 1979) (involving a child's shoe caught in side of escalator); *Lee's Hawaiian Islanders, Inc. v. Safety First Prods., Inc.*, 480 A.2d 927, 929 (N.J. Super. Ct. App. Div. 1984) (involving fire suppression system that failed to operate).

170. See Hall, *supra* note 124.

171. See *id.*

172. See *Willard v. BIC Corp.*, 788 F. Supp. 1059, 1064 (W.D. Mo. 1991); *State Farm Fire & Cas. Co. v. Chrysler Corp.*, 523 N.E.2d 489, 496-97 (Ohio 1988); *Woodin v. J.C. Penney Co.*, 629 A.2d 974, 976-77 (Pa. Super. Ct. 1993); *Thomas v. Amway Corp.*, 488 A.2d 716 (R.I. 1985).

173. See *Williams v. Smart Chevrolet Co.*, 730 S.W.2d 479, 483 (Ark. 1987); see also PROSSER, *supra* note 115, § 103, at 673 ("The mere fact of an accident standing alone . . . does not make out a case that the product was defect."); Hall, *supra* note 124, at 363 (1988) (collecting cases).

properly;¹⁷⁴ or does not show that the product was not misused or tampered with by other parties (such as prior users and repairers) who had access to the product;¹⁷⁵ or cannot show that the product was properly maintained;¹⁷⁶ or does not establish that the product failed during a normal life span of safe use;¹⁷⁷ then a malfunction case will fail. So, the malfunction doctrine will not help a plaintiff injured when her butane lighter causes an explosion if she lights a cigarette while surrounded by gas fumes in a boat her husband has just fueled up;¹⁷⁸ nor will the doctrine assist a plaintiff injured when his grinding disc explodes if he does not show that the prior user had not abused it;¹⁷⁹ nor can homeowners rely upon the doctrine when their

174. *See, e.g., Corcoran v. Gen. Motors Corp.*, 81 F. Supp. 2d 55, 69 (D.D.C. 2000) (involving an alleged brake failure; because other evidence suggested driver error, summary judgment granted for defendant); *Cohen v. Gen. Motors Corp.*, 444 So. 2d 1170 (Fla. Dist. Ct. App. 1984) (involving a plaintiff reaching inside the car and releasing the parking brake while car was sitting on an incline and in reverse gear, causing car to back over his leg); *Saieva v. Budget Rent-A-Car*, 591 N.E.2d 507, 516 (Ill. App. Ct. 1992) (affirming summary judgment for defendant where record supported inference that plaintiff was speeding over dark, wet, and bumpy rural highway and simply lost control of van).

175. *See, e.g., Yielding v. Chrysler Motor Co.*, 783 S.W.2d 353, 356 (Ark. 1990) (involving repairers); *Farmer v. Ford Motor Co.*, 316 So. 2d 140, 141 (La. App. 1975) (involving use of car by prior owner); *Elliott v. Lachance*, 256 A.2d 153, 156 (N.H. 1969) (explaining that hair loss from permanent solution could result if beautician left solution on hair too long); *Scanlon v. Gen. Motors Corp.*, 326 A.2d 673, 676 (N.J. 1974) (involving a dealer repairer and wife as other driver).

176. *See, e.g., Schlier v. Milwaukee Elec. Tool Corp.*, 835 F. Supp. 839, 842 (E.D. Pa. 1993) (involving a power circular saw blade that was dull and saw that was dirty).

177. *See, e.g., Corcoran*, 81 F. Supp. 2d at 69 (“[A]lthough brake failure in a new car gives rise to the inference that a defect existed when the car entered the stream of commerce, this inference is unavailable to the plaintiff, whose complaint involves a seven-and-a-half-year-old car which he drove approximately 23,000 miles without incident.”); *Mullen v. Gen. Motors Corp.*, 336 N.E.2d 338 (Ill. App. Ct. 1975) (involving a twenty-eight-month-old tire driven 24,000 miles and possibly driven on while underinflated); *Woodin v. J.C. Penney Co.*, 629 A.2d 974, 976-77 (Pa. Super. Ct. 1993) (explaining there was no evidence of defect in cord of freezer that had functioned flawlessly for eight years of continuous operation). *See generally* W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN, PROSSER & KEETON ON THE LAW OF TORTS § 99, at 696 (5th ed. 1984) [hereinafter PROSSER & KEETON ON TORTS] (providing “[t]he older the product, the less likely it is that evidence of malfunctioning will suffice as an inference of a construction flaw”).

However, even if the product has had a long and full life, “[w]here a failure is caused by a defect in a relatively inaccessible part integral to the structure of the automobile not generally required to be repaired, replaced or maintained, it may be reasonable, absent misuse, to infer that the defect is attributable to the manufacturer.” *Holloway v. Gen. Motors Corp.*, 271 N.W.2d 777, 782 (Mich. 1978) (reversing a directed verdict for the manufacturer in a case involving a four-year-old car, driven 47,000 miles, that suddenly left highway and hit a utility pole).

178. *Willard v. BIC Corp.*, 788 F. Supp. 1059, 1061 (W.D. Mo. 1991).

179. *See, e.g., Jakubowski v. Minn. Mining & Mfg.*, 199 A.2d 826, 831 (N.J. 1964) (explaining that plaintiff failed to show that grinding disc’s failure was more likely caused by defect than by wearing out or misuse).

There is no hint in the record as to the manner and extent of use of the disc prior to plaintiff’s use of it. Plaintiff failed to produce as a witness the workman he succeeded or to introduce other evidence which would exclude prior mishandling or overuse of the disc as a cause of the break. It is quite possible

toaster-oven catches fire and burns down their home if the toaster may well have lived out its useful life.¹⁸⁰ But a plaintiff must negate only the most likely alternative causes of malfunction, and only by a preponderance of the evidence, so that a plaintiff need not conclusively disprove every conceivable alternative theory of how the malfunction may possibly have occurred.¹⁸¹

By its very nature, the malfunction doctrine generally permits a plaintiff to establish a *prima facie* case—proof of a malfunction together with the absence of plausible causes other than the product’s defectiveness—without resort to expert testimony.¹⁸² But if the testimony of the parties and lay witnesses, together with common sense, do not remove the probability of other causes of a malfunction, then a plaintiff fairly may be required to exclude such other causes by expert testimony.¹⁸³

that a weakness in the backing was created by inexpert or careless use during the preceding operation, causing the disc to break when plaintiff subsequently used it.

Id.

180. *Walker v. Gen. Elec. Co.*, 968 F.2d 116, 120 (1st Cir. 1992) (involving a plaintiffs’ toaster-oven which was used daily for over six years where plaintiffs’ expert admitted that shut-off mechanisms on toaster-ovens sometimes wear out and need to be replaced).

181. In *Welge v. Planters Lifesavers Co.*, 17 F.3d 209 (7th Cir. 1994), the plaintiff was injured when a bottle of peanuts shattered as he attempted to replace the lid. The plaintiff testified that he did not mishandle the bottle, but the defendants asserted that the plaintiff had failed to exclude causes for the shattering apart from the bottle’s defectiveness. *Id.* at 211. In Judge Posner’s words:

Elves may have played ninepins with the jar of peanuts while Welge and Godfrey were sleeping The plaintiff in a products liability suit is not required to exclude every possibility, however fantastic or remote, that the defect which led to the accident was caused by someone other than one of the defendants. . . . Normal people do not lock up their jars and cans lest something happen to damage these containers while no one is looking. The probability of such damage is too remote. It is not only too remote to make a rational person take measures to prevent it; it is too remote to defeat a products liability suit should a container prove dangerously defective.

Id. at 211-12. See also PROSSER, *supra* note 115, § 103, at 673 (“The plaintiff is not required to eliminate all other possibilities, and so prove his case beyond a reasonable doubt. . . . [I]t is enough that he makes out a preponderance of probability.”).

182. Compare *Perez-Trujillo v. Volvo Car Corp.*, 137 F.3d 50, 55-56 (1st Cir. 1998) (“[A] strict liability claimant may demonstrate an unsafe defect through direct eye-witness observation”) and *O’Connor v. Gen. Motors Corp.*, No. CV89028104, 1997 WL 792996, at *3 (Conn. Super. Ct. Apr. 25, 1997) (explaining that a *prima facie* case does not require expert testimony), with *Silvestri v. Gen. Motors Corp.*, 210 F.3d 240, 244 (2d Cir. 2000) (“[I]n order to justify dismissing a case because the plaintiff has failed to present expert testimony, a court must find that the facts necessary to establish a *prima facie* case cannot be presented to any reasonably informed factfinder without the assistance of expert testimony.”).

183. See, e.g., *Booth v. Black & Decker, Inc.*, 166 F. Supp. 2d 215 (E.D. Pa. 2001) (involving a toaster-oven that was allegedly defective and caught fire; plaintiff failed to present *prima facie* case because expert’s methodology for determining defectiveness and causation failed *Daubert* standards); *Corcoran v. Gen. Motors Corp.*, 81 F. Supp. 2d 55, 69 (D.D.C. 2000) (involving alleged brake failure; other evidence suggested driver error); *White v. Grainger Co.*, No. 85-0933-C, 1998 WL 290663 (D.

When a plaintiff successfully invokes the malfunction doctrine, a permissible inference arises that a defect caused the malfunction, an inference which the defendant has no obligation (and frequently has no evidence) to rebut.¹⁸⁴ The plaintiff still has the burden to prove both defectiveness and causation by a preponderance of the evidence; the doctrine merely provides a circumstantial method by which these elements may be proved in the limited class of cases in which direct evidence is unavailable for some good reason.¹⁸⁵ "The plaintiff still must satisfy the burden of proving that a defect is the most likely cause of the accident, and therefore must negate the likelihood of other reasonable causes."¹⁸⁶ Indeed, because of the vagueness of this ephemeral form of evidence built on circumstantial inferences, the plaintiff's burden of proof is especially important in malfunction cases to protect defendants from unfounded liability. Thus, a plaintiff must establish such a case by the *probabilities*, not just the possibilities,¹⁸⁷ and where there is an equal probability that an accident occurred for reasons other than a defect attributable to the defendant, the plaintiff's case will fail.¹⁸⁸

Mass. Feb. 16, 1997) (involving a dimmer switch that started fire); *Falcone v. Chrysler Motors Corp.*, 13 U.C.C. Rep. Serv. 2d 734 (D. Md. 1990) (involving a reclining mechanism on seat that broke in rear-end collision); *Brooks v. Colonial Chevrolet-Buick, Inc.*, 579 So. 2d 1328, 1334 (Ala. 1991) (involving brakes that failed).

184. See *O'Connor*, 1997 WL 792996, at *3.

[T]he circumstantial evidence rules established in these malfunction theory cases merely establish a prima facie case and permit but do not require a finding for the plaintiff even in the absence of contrary evidence. Thus a defendant need not come forward with rebuttal evidence to avoid a directed verdict. . . . [T]he burden of production does not shift

Id.; see also *Cassisi v. Maytag Co.*, 396 So. 2d 1140, 1151 (Fla. Dist. Ct. App. 1981) (explaining that "neither the burden of proof or . . . of producing evidence is cast upon the defendant"). *But cf.* *Graham v. Walter S. Pratt & Sons Inc.*, 706 N.Y.S.2d 242, 243 (App. Div. 2000) (explaining that the inference of defectiveness (and causation) raised by a product malfunction serves effectively to shift to the defendant the burden of coming forward with the evidence (the "burden of production")).

185. See, e.g., *Walker v. Gen. Elec. Co.*, 968 F.2d 116 (1st Cir. 1992); *Ocean Barge Transp. Co. v. Hess Oil Virgin Islands Corp.*, 726 F.2d 121, 124-25 (3d Cir. 1984) (V.I. law) ("[T]he malfunction theory in no way relieves the plaintiff of the burden of proving a defect . . .").

186. *Ocean Barge Transp. Co.*, 726 F.2d at 125.

187. See *Mateika v. LaSalle Thermogas Co.*, 418 N.E.2d 503, 505 (Ill. App. Ct. 1981).

For circumstantial evidence to make out a prima facie case, it must tend to negate other reasonable causes, or there must be an expert opinion that the product was defective. Because liability in a products liability action cannot be based on mere speculation, guess or conjecture, the circumstances shown must justify an inference of probability as distinguished from mere possibility.

Id.

188. "Evidence which points equally to a cause for which the defendants are responsible and to one for which the defendants are not responsible is not sufficient to make a case of strict liability in tort for submission to a jury." *Willard v. BIC Corp.*, 788 F. Supp. 1059, 1064 (W.D. Mo. 1991). See also *Mays v. Ciba-Geigy Corp.*, 661 P.2d 348, 360 (Kan. 1983) (involving a gas pipeline explosion); *State Farm Fire & Cas. Co. v. Chrysler Corp.*, 523 N.E.2d 489, 496-97 (Ohio 1988) (involving an automobile fire).

4. Acceptance

Having spread across the nation with little fanfare over the last half century, the malfunction doctrine has become a well established precept of modern products liability law.¹⁸⁹ A substantial and growing majority of American jurisdictions¹⁹⁰ (typically without the “malfunction doctrine” label) now accept this principle of circumstantial evidence for proving defectiveness in strict products liability.¹⁹¹

189. See PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3, Reporters’ Note cmt. b (“A huge body of case law supports this proposition.”). For the older case authority, see PROSSER, *supra* note 115, § 103.

190. Asserting that the doctrine is a minority rule, FRUMER & FRIEDMAN, *supra* note 7, list the following jurisdictions as adhering to some version of the malfunction theory under whatever name: Alabama, Arizona, Arkansas, Connecticut, D.C., Florida, Idaho, Illinois, Kansas, Louisiana, Maryland, Missouri, Nevada, New Hampshire, New York, North Carolina, Pennsylvania, Tennessee, Texas, West Virginia, and Wyoming. To this list should be added at least California, Colorado, Georgia, Hawaii, Indiana, Iowa, Kentucky, Maine, Massachusetts, Minnesota, Montana, New Jersey, Ohio, Oklahoma, Oregon, Puerto Rico, Rhode Island, Utah, the Virgin Islands, Washington, and Wisconsin. See, e.g., *Perez-Trujillo v. Volvo Car Corp.* (Sweden), 137 F.3d 50, 55-56 (1st Cir. 1998) (P.R. law) (applying a version of the malfunction doctrine); *Taylor v. Cooper Tire & Rubber Co.*, 130 F.3d 1395, 1398 (10th Cir. 1997) (Utah law) (same); *Hall v. Gen. Motors Corp.*, No. 91-36053, 1993 WL 410692 at *3 (9th Cir. 1993) (Or. Law) (same); *Weir v. Fed. Ins. Co.*, 811 F.2d 1387, 1392-93 (10th Cir. 1987) (Colo. law) (same); *Ocean Barge Transp. Co.*, 726 F.2d at 124-25 (V.I. law) (same); *Rudd v. Gen. Motors Corp.*, 127 F. Supp. 2d 1330, 1344-46 (M.D. Ala. 2001) (same); *White v. W.W. Grainger Co.*, No. 85-0986, 1988 WL 290663 at *2-3 (D. Mass. Feb. 16, 1988) (same); *Hinckley v. La Mesa R.V. Ctr., Inc.*, 205 Cal. Rptr. 22, 28-29 (Ct. App. 1984) (same); *Skil Corp. v. Lugsdin*, 309 S.E.2d 921, 923-24 (Ga. Ct. App. 1983) (same); *Stewart v. Budget Rent-A-Car Corp.*, 470 P.2d 240, 243-44 (Haw. 1970) (same); *Ford Motor Co. v. Reed*, 689 N.E.2d 751, 754-55 (Ind. Ct. App. 1997) (same); *Perkins v. Trailco Mfg. & Sales Co.*, 613 S.W.2d 855, 857 (Ky. 1981) (same); *Snider v. Bob Thibodeau Ford, Inc.*, 202 N.W.2d 727, 730 (Mich. Ct. App. 1972) (same); *Lee v. Crookston Coca-Cola Bottling Co.*, 188 N.W.2d 426, 433 (Minn. 1971) (same); *Rix v. Gen. Motors Corp.*, 723 P.2d 195, 203-04 (Mont. 1986) (same); *Myrlak v. Port Auth.*, 723 A.2d 45, 52 (N.J. 1999) (same); *State Farm Fire & Cas. Co. v. Chrysler Corp.*, 523 N.E.2d 489, 494 (Ohio 1988) (same); *Marathon Battery Co. v. Kilpatrick*, 418 P.2d 900, 914-15 (Okla. 1965) (same); *Thomas v. Amway Corp.*, 488 A.2d 716, 722 (R.I. 1985) (same); *Bombardi v. Pochel’s Appliance & TV Co.*, 518 P.2d 202, 204-05 (Wash. Ct. App. 1973) (same); *Jagmin v. Simonds Abrasive Co.*, 211 N.W.2d 810, 815-16 (Wis. 1973) (same). While most courts are less explicit than New Jersey in formally adopting the doctrine, each case above acknowledges this method of proof for use in appropriate cases.

191. Because strict liability in tort is the chief claim in modern products liability litigation, most applications of the malfunction doctrine have been in this context. But the malfunction theory is also especially applicable to claims for breach of the implied warranty of merchantability which are based upon a product’s being “unfit” for the ordinary purposes for which such goods are used. See U.C.C. § 2-314(2)(c) (1987). In *Greco v. Bucciconi Eng’g Co.*, 283 F. Supp. 978, 982 (W.D. Pa. 1967), *aff’d*, 407 F.2d 87 (3d Cir. 1969), the court explained: “[W]hen machinery ‘malfunctions’, it obviously lacks fitness regardless of the cause of the malfunction. Under the theory of warranty, the ‘sin’ is the lack of fitness as evidenced by the malfunction itself rather than some specific dereliction by the manufacturer in constructing or designing the machinery.” See also *Estate of Triplett v. Gen. Elec. Co.*, 954 F. Supp. 149 (W.D. Mich. 1996) (involving a ballast in fluorescent light that allegedly caused fire); *Collins v. Sears, Roebuck & Co.*, 583 N.E.2d 873 (Mass. App. Ct. 1992) (involving fire in dryer’s electrical system); *Genetti v. Caterpillar, Inc.*, 621 N.W.2d 529, 541 (Neb. 2001) (providing

Certifying the propriety of the doctrine's widespread acceptance, the American Law Institute in 1998 endorsed the principle in the *Products Liability Restatement* § 3.¹⁹² Courts and juries need to be cautious to apply the malfunction doctrine only in those limited situations where, first, the circumstances of the case conspire to prevent the plaintiff from establishing defectiveness and causation by ordinary methods of proof, and, second, where circumstantial evidence in the case points fairly to some defect attributable to the manufacturer as the cause of the accident.¹⁹³ In a proper case,¹⁹⁴ however, it is difficult to see how any jurisdiction could reject some properly formulated version¹⁹⁵ of such a well-established,¹⁹⁶ fair,¹⁹⁷ and logical¹⁹⁸

a thorough analysis); *Dewitt v. Eveready Battery Co.*, 550 S.E.2d 511, 511-16 (N.C. Ct. App. 2001) (reversing summary judgment for defendant on warranty claims); *Sipes v. Gen. Motors Corp.*, 946 S.W.2d 143, 158 (Tex. Ct. App. 1997) (involving an airbag that failed to deploy).

192. PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 (1998). The *Restatement* provides:

It may be inferred that the harm sustained by the plaintiff was caused by a product defect existing at the time of sale or distribution, without proof of a specific defect, when the incident that harmed the plaintiff:

(a) was of a kind that ordinarily occurs as a result of product defect; and

(b) was not, in the particular case, solely the result of causes other than product defect existing at the time of sale or distribution.

Id.; see also *Myrlak v. Port Auth.*, 723 A.2d 45, 50 (N.J. 1999) (adopting *Products Liability Restatement* § 3).

193. See PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 cmt. b; see also James A. Henderson & Aaron D. Twerski, *Intuition and Technology in Product Design Litigation: An Essay on Proximate Causation*, 88 GEO. L.J. 659, 672 (2000) (explaining that malfunction cases "constitute a relatively narrow subset of products liability cases"); Hoffman, *supra* note 124, at 380.

[I]t will be up to the courts to ensure that [§ 3 of the Restatement] is appropriately limited to cases in which circumstantial evidence truly supports a reasonable inference that a defect existed in the product at the time it left the manufacturer's hands and is not simply a "catchall" for cases in which plaintiffs are unable to sustain their burden of proof of a specific manufacturing or design defect.

Id.

194. Such as when a new appliance explodes or catches fire. See, e.g., *Cassisi v. Maytag Co.*, 396 So. 2d 1140, 1151-52 (Fla. Dist. Ct. App. 1981) (explaining that strength of inference of defectiveness from malfunction depends on particular type of product and that the stronger inference of defect arises from dangerous malfunction in self-operating products like televisions and dryers than in products like cars leaving highway whose dangers are to a large extent under driver's control).

195. The *Products Liability Restatement's* formulation is not ideal, which reflects the difficulty of formulating a concise, general statement of the principle. A formulation of the malfunction doctrine like the following might be easier to understand and apply:

If proof of a specific product defect is unavailable through no fault of the plaintiff, the factfinder may infer that a product which malfunctioned was defective at the time of sale if the plaintiff establishes that (1) the malfunction was of a kind that ordinarily does not occur unless the product is defective, and (2) any defect in the product was most likely attributable to the manufacturer and not to the plaintiff, a third party, normal wear and tear, or other causes.

Consider also the commonsense formulation of Chief Judge Richard Posner: "If it is the kind of accident that would not have occurred but for a defect in the product, and if it is reasonably plain that the defect was not introduced after the product was sold, the accident is evidence that the product

principle of proof. In short, the manifest merits of this simple canon of circumstantial evidence suggests that its acceptance should soon be universal.

IV. FOOD AND DRINK

From early times, people have relied on the skill and care of others to catch, grow, gather, preserve, prepare, and provide much of the food and drink indispensable to survival. Whether paid for with a beaver pelt, a copper coin, or a modern dollar, food has always been the single most important product bought and sold by human beings. Both king and pauper live by food and drink, just as both may die by food or drink gone bad. And this essential fact of human life is as true today as it was a thousand years ago. Because pure food is necessary to survival, rendering most persons extraordinarily dependent for their health, safety, and very lives on the care and skill of food providers, the rules that govern liability for selling defective food and drink have long stood apart from those concerning other types of products.¹⁹⁹

Defective food and drink can kill and injure human beings in myriad ways. The types of defects in different types of foods span the gamut, from spoiled meat,²⁰⁰ particles of glass in ice cream,²⁰¹ ptomaine poison in a can of pork and beans,²⁰² a piece of metal in a meatball,²⁰³ arsenic in biscuit flour,²⁰⁴ tacks or wire in a loaf of

was defective when sold." *Welge v. Planters Lifesavers Co.*, 17 F.3d 209, 211 (7th Cir. 1994).

196. See PROSSER, *supra* note 115, § 103.

197. When a product "is lost or destroyed in the accident, direct evidence of specific defect may not be available." PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 3 cmt. b. In this case the malfunction doctrine "may offer the plaintiff the only fair opportunity to recover." *Id.*

198. See *Brownell v. White Motor Corp.*, 490 P.2d 184, 187 (Or. 1971).

When the jury reasonably can find that the product is unchanged from the condition it was in when sold and the unusual behavior of the product is not due to any conduct on the part of the plaintiff or anyone else who has a connection with the product, logic dictates that it is a distinct possibility that there is some defect in the product.

Id.

199. "No man can justify selling corrupt victual, but an action on the case lies against the seller, whether the victual was warranted to be good or not. But if a man sells me cloth or other thing, [he must] *know the cloth to be bad* [to] be punished by writ on the case." *DICKERSON*, *supra* note 48, at 20 (emphasis added) (quoting *Keilways Report*, 91, 72 Eng. Rep. 254 (1507)).

200. See, e.g., *Salmon v. Libby, McNeill & Libby*, 76 N.E. 573 (Ill. 1905) (involving food poisoning from spoiled mince meat); *Prejean v. Great Atlantic & Pacific Tea Co.*, 457 So. 2d 60, 61 (La. Ct. App. 1984) (involving rotten roast that was "green as grass"); *Swift & Co. v. Wells*, 110 S.E.2d 203, 204 (Va. 1959) (involving food poisoning from pork shoulder containing staphylococci organisms).

201. See *Minutilla v. Providence Ice Cream*, 144 A. 884, 885 (R.I. 1929).

202. See *Davis v. Van Camp Packing Co.*, 176 N.W. 382, 383 (Iowa 1920).

203. See *Jones v. QMRI, Inc.*, 551 S.E.2d 867, 869 (N.C. Ct. App. 2001).

204. See *Ballard & Ballard Co. v. Jones*, 21 So. 2d 327, 328 (Ala. 1945).

bread,²⁰⁵ clam shells in a bowl of chowder²⁰⁶ and fried clam strips,²⁰⁷ a crustaceous creature in a can of mackerel,²⁰⁸ strychnine in a box of candy,²⁰⁹ a metal screw in chewing gum,²¹⁰ and glass,²¹¹ dead flies,²¹² worms,²¹³ condoms,²¹⁴ and mice²¹⁵ in Coca-Cola and other soft drinks, not to mention soft drink bottles that explode.²¹⁶ But the prize for the most repulsive “food” item sold to a consumer probably should be awarded to the seller of a can of chewing tobacco containing a human toe.²¹⁷

The great majority of defective food and drink cases involve claims that the foodstuffs contained “manufacturing” defects—hazardous objects, contaminants, and other deviations from the safe and wholesome condition intended by the seller and expected by the buyer.²¹⁸ Less frequently, foodstuff cases involve claims of defects in design or warnings, as from serving coffee at too high a temperature with insufficient warnings of the risks,²¹⁹ or failing to warn consumers of possible allergic reactions from certain types of food.²²⁰ This section examines the recurring

205. See *Collins Baking Co. v. Savage*, 150 So. 336, 337 (Ala. 1933).

206. See *Koperwas v. Publix Supermarkets, Inc.*, 534 So. 2d 872, 873 (Fla. Dist. Ct. App. 1988).

207. See *Mitchell v. T.G.I. Friday's*, 748 N.E.2d 89, 90 (Ohio Ct. App. 2000).

208. See *Johnson v. Epstein*, No. 96-CV-215 (RSP/ONH), 1998 WL 166805 (N.D.N.Y. April 10, 1998).

209. See *Whitehorn v. Nash-Finch Co.*, 293 N.W. 859, 860 (S.D. 1940).

210. See *Hickman v. Wm. Wrigley, Jr. Co.*, 768 So. 2d 812 (La. Ct. App. 2000).

211. See *Watson v. Augusta Brewing Co.*, 52 S.E. 152, 152 (Ga. 1905).

212. See *Floyd v. Florence Nehi Bottling Co.*, 188 S.C. 98, 100, 198 S.E. 161, 161 (S.C. 1938).

213. See *Norfolk Coca-Cola Bottling Works v. Land*, 52 S.E.2d 85, 86 (Va. 1949).

214. See *Hagan v. Coca-Cola Bottling Co.*, 804 So. 2d 1234, 1236 (Fla. 2001).

215. See *Eisenbeiss v. Payne*, 25 P.2d 162, 164 (Ariz. 1933).

216. See, e.g., *Escola v. Coca-Cola Bottling Co.*, 150 P.2d 436, 437 (Cal. 1944) (involving exploding bottle). Because these cases do not involve risks from consuming the beverage itself, they are treated elsewhere. See cases cited *supra* note 146; see generally Craig Spangenberg, *Exploding Bottles*, 24 OHIO ST. L.J. 516 (1963) (examining bottle cases, including mice-in-bottle cases).

217. See *Pillars v. R.J. Reynolds Tobacco Co.*, 78 So. 365 (Miss. 1918).

218. See, e.g., *Hickman v. Wm. Wrigley, Jr. Co.*, 768 So. 2d 812, 814 (La. Ct. App. 2000) (involving screw in gum); *Otis Spunkmeyer, Inc. v. Blakely*, 30 S.W.3d 678, 681 (Tex. Ct. App. 2000) (involving hard object in cookie).

219. The hot coffee cases normally involve claims of defective design (too high a temperature) or warnings (failure to warn adequately of the high temperature and its capacity to burn), rather than manufacturing defects. See, e.g., *Olliver v. Heavenly Bagels, Inc.*, 729 N.Y.S.2d 611 (Sup. Ct. 2001) (involving injury from hot coffee; summary judgment for defendants; discussing other cases). Liability in such cases thus depends on rules that govern these other types of defects. See PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 7 cmt. a; see generally Zachari Rami, Note, *Courts-Split as to Whether Consumers Injured by Hot Coffee Can Seek Recovery*, 10 LOY. CONSUMER L. REV. 310 (1998) (discussing split in hot coffee burn cases). On punitive damages for coffee burns, see 2 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 18:3.

220. See, e.g., *Livingston v. Marie Callender's, Inc.*, 85 Cal. Rptr. 2d 528, 529 (Ct. App. 1999) (involving failure to warn of risk of possible reaction to MSG in soup). Some cases have imposed at least a duty to warn of the risk of a serious, possibly deadly, infection from contaminated oysters, even though the risk normally is only to persons with cirrhosis of the liver, hepatitis, diabetes, high iron content, or suppressed immune systems, which conditions diminish the ability of the body to destroy the bacteria. See *Cain v. Sheraton Perimeter Park S. Hotel*, 592 So. 2d 218, 223 (Ala. 1991); Simeon

issues that arise in manufacturing defect cases involving food and drink.²²¹

A. Early Law

Early law provided criminal penalties and civil remedies for the sale of defective food and drink. Beginning in 1266, a series of early English statutes criminalized the sale of “corrupt” food and drink for immediate consumption,²²² and, by 1431, the civil law held purveyors of foodstuffs strictly accountable for the wholesomeness of their provisions.²²³ Whether this special duty amounted to a common law warranty of the wholesomeness of food is uncertain,²²⁴ but American courts from an early date assumed that it did. In an 1815 New York decision, *Van Bracklin v. Fonda*,²²⁵ a seller of beef was held strictly liable for failing to disclose

v. Doe, 618 So. 2d 848, 851 (La.1993).

221. For early treatments of the liability of purveyors of food and drink, see DICKERSON, *supra* note 48; Charles P. Light, Jr. & Robert H. Gray, *The Sale of Food and Drink at Common Law and Under the Uniform Sales Act*, 50 HARV. L. REV. 553-55 (1937); James McGuiher & Stanley C. Morris, *Handling Food Products Liability Cases*, 1 FOOD DRUG COSM. L.Q. 109 (1946); Bradshaw Mintener, *Product Liability Law*, 5 FOOD DRUG COSM. L.J. 168 (1950); Rollin M. Perkins, *Unwholesome Food as a Source of Liability (pts. 1 and 2)*, 5 IOWA L. BULLETIN 6, 86 (1919, 1920); Note, *Civil Liability in the Manufacture and Sale of Foods and Beverages*, 92 U. PA. L. REV. 306 (1944).

For more recent treatments, see Lars Noah, *One Decade of Food and Drug Law Scholarship: A Selected Bibliography*, 55 FOOD & DRUG L.J. 641 (2000); Dane Getz, Note, *Products Liability—Illinois Redefines the Standard of Merchantability for Food Products: Reasonable Expectations*, 18 S. ILL. U. L.J. 637 (1994); Carl Crosby Lehmann, Comment, *Artful Pleading and Circumstantial Evidence in Food Manufacturing Defect Cases: Is it too Easy to Get a Jury?*, 72 N.D. L. REV. 481 (1996); Rami, *supra* note 219; R. Lee Vanderpool, Note, *Porteous v. St. Ann’s Café & Deli: Pulling the Broken Teeth of the Foreign-National Doctrine*, 74 TUL. L. REV. 379 (1999); Jane Massey Draper, Annotation, *Liability For Injury or Death Allegedly Caused by Food Product Containing Object Related To, But Not Intended to be Present in Product*, 2 A.L.R.5th 189 (1992); Jane Massey Draper, Annotation, *Liability for Injury or Death Caused by Spoilage, Contamination, or Other Deleterious Condition of Food or Food Product*, 2 A.L.R.5th 1 (1992); see generally PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 7 (restating the law for “Defective Food Products”); FRUMER & FRIEDMAN, *supra* note 7, § 48; Prod. Liab. Rep. (CCH) ¶¶ 30,002 H, 30,007. On English, Irish, and E.U. law, see D.J. JUKES, *FOOD LEGISLATION OF THE UK* (1997); RAYMOND O’ROURKE, *FOOD SAFETY AND PRODUCT LIABILITY* (2000); RAYMOND O’ROURKE, *EUROPEAN FOOD LAW* (1998).

222. See DICKERSON, *supra* note 48, at 20.

223. “A taverner or vintner was bound as such to sell wholesome food and drink.” F.B. Ames, *The History of Assumpsit*, 2 HARV. L. REV. 1, 9 (1888). The case decided in 1431 provided: “[I]f I come into a tavern to eat and the taverner gives and sells me beer or food which is corrupt, by which I am put to great suffering, I shall clearly have an action against the taverner on the case even though he makes no warranty to me.” Year Book, 9 Hen. VI, f. 53B, pl.37 (1431), *quoted in* DICKERSON, *supra* note 48, at 20.

On the evolution of the tort-like warranty applied to food cases, see DICKERSON, *supra* note 48; William L. Prosser, *The Assault on the Citadel (Strict Liability to the Consumer)*, 69 YALE L.J. 1099, 1103-10 (1960).

224. Compare HARRY C.W. MELICK, *THE SALE OF FOOD AND DRINK* 10 (1936) (stating yes), with Perkins, *supra* note 221, at 8-9 (stating no).

225. 7 Am. Dec. 339 (N.Y. 1815).

that the cow had been diseased prior to slaughter. Relying on *Blackstone*, the court observed that a warranty of quality is always implied into the sale of foodstuffs because “the preservation of health and life” requires the seller to be “bound to know that they are sound and wholesome at his peril.”²²⁶ A century later, recognizing the special vulnerability of food consumers, the New York court reaffirmed the view that the special importance of food safety fully justifies imposing strict liability on sellers of food and drink.²²⁷

Although American courts from an early date applied the ancient tort-like warranty of quality to sales of foodstuffs made directly to consumers,²²⁸ the absence of privity of contract often obstructed recovery, especially in cases brought in warranty.²²⁹ However, from the early 1900s,²³⁰ some courts, often intermingling theories of negligence and implied warranty, began breaking through the privity barrier to hold food sellers liable to third parties.²³¹ By the middle of the twentieth

226. *Id.* More fully, the court remarked:

[I]t is stated as a sound and elementary proposition, that in contracts for provisions, it is always implied that they are wholesome; and if they are not, case lies to recover damages for the deceit.

In the sale of provisions for domestic use, the vendor is bound to know that they are sound and wholesome, at his peril. This is a principle not only salutary, but necessary to the preservation of health and life.

In the present case, the concealment of the fact that the animal was diseased, is equivalent to the suggestion of a falsehood that she was sound.

Id. at 339-40.

227. *Race v. Krum*, 118 N.E. 853, 854 (N.Y. 1918).

This rule is based upon the high regard which the law has for human life. The consequences to the consumer resulting from consumption of articles of food sold for immediate use may be so disastrous that an obligation is placed upon the seller to see to it, at his peril, that the articles sold are fit for the purpose for which they are intended. The rule is an onerous one, but public policy, as well as the public health, demand such obligation should be imposed.

Id.

228. *See, e.g., Van Bracklin v. Fonda*, 7 Am. Dec. 339 (N.Y. 1815) (finding the implication of fraudulent concealment of contamination, and possibly an express representation that the beef was edible); *see generally Jacob E. Decker & Sons, Inc. v. Capps*, 164 S.W.2d 828, 831-32 (Tex. 1942) (noting that the warranty in food cases was not the modern contractual warranty but the separate tort law warranty derived from the action of deceit).

229. For cases against retailers or restaurants, where the absence of privity was held to bar recovery, *see Borucki v. MacKenzie Bros. Co.*, 3 A.2d 224 (Conn. 1938); *Hazelton v. First Nat'l Stores*, 190 A. 280 (N.H. 1937); *Bourcheix v. Willow Brook Dairy*, 196 N.E. 617 (N.Y. 1935); *Shepard v. Beck Bros.*, 225 N.Y.S. 438, 440 (City Ct. 1927); *Prinsen v. Russos*, 215 N.W. 905, 906 (Wis. 1927). For similar cases against manufacturers, *see Nelson v. Armour Packing Co.*, 90 S.W. 288, 289 (Ark. 1905); *Chysky v. Drake Bros. Co.*, 139 N.E. 576, 578 (N.Y. 1923); *see also DICKERSON, supra* note 48, at 63-69 (discussing the “[w]ant of privity as a bar to recovery”).

230. And possibly before. *See, e.g., Tomlinson v. Armour & Co.*, 70 A. 314 (N.J. 1908) (citing earlier cases); *Mazetti v. Armour & Co.*, 135 P. 633 (Wash. 1913) (same); *see generally Prosser, supra* note 223, at 1106 (discussing, *inter alia*, earlier cases).

231. For a more expansive discussion of these developments, *see Prosser, supra* note 223 at 1103-10.

century, many jurisdictions had abandoned the requirement of privity in food cases by enforcing a special food warranty in tort that ran to remote consumers.²³²

One such case was *Jacob E. Decker & Sons v. Capps*²³³ in which a producer sold contaminated sausage to a retail merchant who sold it to Mr. Capps. The Capps family consumed the sausage, which killed one of the children and seriously sickened the remainder of the family. In an action against the remote producer, the court imposed an implied warranty in tort into the sale of food and drink running to those injured by the defective meat, reasoning that this kind of strict liability to remote food consumers is necessary as a deterrent to protect human health and life; that remote providers intend that the food they sell to intermediaries eventually will be consumed by someone; that most consumers, lacking the tools, skills, and time necessary to inspect their food for hazards, are unable to protect themselves effectively against dangerous defects in the foods they eat; and that legal incentives for improving food safety are best placed on food suppliers.²³⁴ But it should be noted that *Capps* was in the vanguard of developing doctrine on the privity issue, and most jurisdictions continued for some time to prohibit warranty actions in the absence of privity, leaving negligence for some time as the only form of relief in cases of this type.²³⁵

B. Theories of Recovery

1. Negligence

Although most jurisdictions continued to require privity of contract in most negligence claims well into the twentieth century,²³⁶ courts have long made an exception for products that were “imminently dangerous,” initially as to a product’s inherent condition²³⁷ and later as to its condition if defective.²³⁸ Food products were so classified from an early date, such that the absence of privity quickly dropped

232. See PROSSER, *supra* note 115, at 539.

233. 164 S.W.2d 828 (Tex. 1942).

234. *Id.* at 829.

[W]here food products sold for human consumption are unfit for that purpose, there is such an utter failure of the purpose for which the food is sold, and the consequences of eating unsound food are so disastrous to human health and life, that the law imposes a warranty of purity in favor of the ultimate consumer as a matter of public policy.

Id.

235. See Prosser, *supra* note 223, at 1108-10.

236. This was so until rejected by *MacPherson v. Buick Motor Co.*, 111 N.E. 1050 (N.Y. 1916), and its progeny.

237. Such products include poisons, guns, and explosives. See, e.g., *Huset v. J.I. Case Threshing Mach. Co.*, 120 F. 865, 871 (8th Cir. 1903).

238. See *MacPherson*, 111 N.E. at 1054.

away as an obstacle to negligence claims.²³⁹

Because of society's special concern for food safety, some of the early negligence decisions held purveyors of food and drink to a standard of extraordinary or utmost care.²⁴⁰ Today, however, consistent with the widespread repudiation of special levels of care,²⁴¹ modern courts hold sellers of food and drink, like sellers of other types of products, to the normal standard of reasonable care.²⁴²

Often, the easiest way for a plaintiff to establish negligence is by proof of a violation of a pure food act which in many states amounts to negligence *per se*.²⁴³ But before a court may rule that a pure food act provides a basis for negligence *per se*, the defendant must have violated the statute, which typically requires a finding that the particular foodstuff was "adulterated"²⁴⁴ and which may allow a defense for good faith efforts to comply.²⁴⁵

Without the assistance of a pure food act, a plaintiff may have difficulty proving the negligence of the purveyor of defective food.²⁴⁶ This is particularly true

239. See, e.g., *Freeman v. Schultz Bread Co.*, 163 N.Y.S. 396, 397 (1916) (finding lack of privity did not bar recovery); *Minutilla v. Providence Ice Cream Co.*, 144 A. 884, 885-86 (R.I. 1929) (providing good summary of privity issue); see also *Drury v. Armour & Co.*, 216 S.W. 40, 41 (Ark. 1997); Comment, *The Decline of Caveat Emptor in the Sale of Food*, 4 FORDHAM L. REV. 295, 296 n.7 (1935) (collecting cases).

240. See, e.g., *Linker v. Quaker Oats Co.*, 11 F. Supp. 794, 796 (D. Okla. 1935) (holding to a very high degree of care); *Eisenbeiss v. Payne*, 25 P.2d 162, 166 (Ariz. 1933) (imposing the "highest duty known to the law").

241. See PROSSER & KEETON ON TORTS, *supra* note 177, § 34.

242. See *Flagstar Enters., Inc. v. Davis*, 709 So. 2d 1132, 1139 (Ala. 1997); *Porteous v. St. Ann's Cafe & Deli*, 713 So. 2d 454, 457-58 (La. 1998); *Bullara v. Checker's Drive-In Rest., Inc.*, 736 So. 2d 936, 938 (La. Ct. App. 1999); *Jones v. GMRI, Inc.*, 551 S.E.2d 867, 870 (N.C. Ct. App. 2001).

243. See, e.g., *Allen v. Delchamps, Inc.*, 624 So. 2d 1065, 1067 (Ala. 1993) (involving prepackaged celery hearts treated with sulfites in violation of FDA regulations banning their use on fresh produce; asthmatic customer suffered anaphylactic reaction); *Sonsky v. Phoenix Coca-Cola Bottling Co.*, 499 P.2d 741, 743 (Ariz. Ct. App. 1972) (involving metallic filings in bottle of Coke); *Chambley v. Apple Rest., Inc.*, 504 S.E.2d 551, 553 (Ga. Ct. App. 1998) (involving wrapped condom in chicken salad); *Koster v. Scotch Assoc.*, 640 A.2d 1225, 1228 (N.J. Super. Ct. Law Div. 1993) (involving salmonella); *Coward v. Borden Foods, Inc.*, 267 S.C. 423, 426, 229 S.E.2d 262, 264 (1976) (involving a hard object in "Cracker Jack" popcorn). *Contra, Jones*, 551 S.E.2d at 867 (noting that negligence *per se* doctrine inapplicable to food case).

244. See, e.g., *Norris v. Pig'n Whistle Sandwich Shop*, 53 S.E.2d 718, 723 (Ga. Ct. App. 1949) (stating that barbecued pork sandwich containing piece of pig bone was not adulterated); *Goodman v. Wenco Foods, Inc.*, 423 S.E.2d 444, 451-52 (N.C. 1992) (stating that a small bone sliver in ground beef was not "adulteration"); *Jones*, 551 S.E.2d at 873 (noting that North Carolina law imposes duty on restaurant not to sell "adulterated" food); *Allen v. Grafton*, 164 N.E.2d 167, 174-75 (Ohio Ct. App. 1960) (holding that oysters containing shell were not adulterated).

245. For example, a criminal pure food act may provide an exception if the seller has acted in good faith, as by obtaining a guarantee of wholesomeness from its own supplier. See DICKERSON, *supra* note 48, at 282.

246. See, e.g., *Livingston v. Marie Callender's, Inc.*, 85 Cal. Rptr. 2d 528, 538 (Ct. App. 1999) (affirming judgment for defendant on negligence, but reversing on strict liability in tort, for failure to warn of possible allergic reaction to MSG in soup); *Porteous*, 713 So. 2d at 457-58 (reversing judgment for plaintiff on claim of restaurant's negligence for failing to find and remove pearl in oyster

in the case of a food-product retailer who purchases the food and then resells it in a sealed container, a situation which deprives the seller of any opportunity to inspect for defects.²⁴⁷ But, in other cases, the seller's fault is clear.²⁴⁸ Also, some courts allow juries to infer the negligence of a manufacturer or other seller merely from the presence of a defect in the food.²⁴⁹

In cases where direct evidence of responsibility and fault is unavailable, but where circumstantial evidence points to the defendant's probable negligence as the cause of defective food, plaintiffs in most jurisdictions can invoke the doctrine of *res ipsa loquitur*.²⁵⁰ Speaking to this very point, Henry David Thoreau declared that "some circumstantial evidence is very strong, as when you find a trout in the milk."²⁵¹ In such cases, the circumstantial evidence surrounding the accident leads to inferences that the food would not have been defective without the negligence of someone, that the defendant's exclusive control over the foodstuff at the time of preparation suggests that the negligence was that of the defendant, and that the plaintiff did not contribute to the injury.²⁵² Such inferences may be quite strong in cases in which the consumer is injured by a foreign object in food or drink,

po-boy sandwich); *Cain v. Winn-Dixie La., Inc.*, 757 So. 2d 712, 715 (La. Ct. App. 1999) (holding that there was no proof that grocery store's bakery was negligent in allowing hair to get into baked cake); *Jones*, 551 S.E.2d at 873 (affirming directed verdict in favor of restaurateur on negligence claim for serving meatball with a piece of metal lodged inside).

247. See, e.g., *McCauley v. Manda Bros. Provisions Co.*, 211 So. 2d 637 (La. 1968) (noting that retailer is under no duty to open sealed container). At least in some jurisdictions, however, a food consumer injured by a deleterious substance purchased in a sealed container may recover against the seller for breach of an implied warranty of wholesomeness. See *Bonenberger v. Pittsburgh Mercantile Co.*, 28 A.2d 913, 914-15 (Pa. 1942). On the sealed-container (or "original-package") doctrine or defense, see generally 2 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 19:1.

248. See, e.g., *Flagstar Enters, Inc. v. Davis*, 709 So. 2d 1132, 1137 (Ala. 1997) (allowing blood from unbandaged cut to spill into take-out order of biscuits and gravy); *Bullara v. Checker's Drive-In Rest., Inc.*, 736 So. 2d 936, 937 (La. Ct. App. 1999) (allowing cockroach to enter chili dog, failing to discover the roach lurking in dog prior to sale, and making sale to customer of roach-infested dog).

249. See, e.g., *Bullara*, 736 So. 2d at 938 (allowing inference by implication); *Vamos v. Coca-Cola Bottling Co. of N.Y., Inc.*, 627 N.Y.S.2d 265, 270 (Civ. Ct. 1995) ("It has long been the rule that a prima facie case of negligence is made out merely upon proof of the presence of the foreign substance . . . sold in a sealed container."); *Cohen v. Allendale Coca-Cola Bottling Co.*, 291 S.C. 35, 38, 351 S.E.2d 897, 899 (Ct. App. 1986) (Bell, J.) (allowing inference of negligence).

250. See, e.g., *Leikach v. Royal Crown Bottling Co.*, 276 A.2d 81, 86 (Md. 1971) (applying *res ipsa loquitur* doctrine); *Santine v. Coca-Cola Bottling Co.*, 591 P.2d 329, 333 (Okla. Ct. App. 1978) (same); *Samson v. Riesing*, 215 N.W.2d 662, 667 (Wis. 1974) (same). *Contra Jones v. GMRI, Inc.*, 551 S.E.2d 867, 873 (N.C. Ct. App. 2001) ("[R]es ipsa loquitur does not apply in a case involving an injury from the ingestion of an adulterated food product."); see generally FRUMER & FRIEDMAN, *supra* note 7, §§ 48.08[3], 48.10[2]. On the related malfunction doctrine, see *supra* Part III.B.

251. Henry David Thoreau, *Nov. 11, 1850*, in 2 THE JOURNAL OF HENRY DAVID THOREAU 94 (Bradford Torrey & Frances H. Allen, eds. 1984).

252. See, e.g., *Knight v. Just Born, Inc.*, No. CV-99-606-ST, 2000 WL 924624 (D. Or. Mar. 28, 2000) (involving severe chemical burns to mouth from eating Hot Tamale candy); *Fender v. Colonial Stores, Inc.*, 225 S.E.2d 691, 696 (Ga. Ct. App. 1976) (involving injury from exploding soda bottle); *Giant Food, Inc. v. Wash. Coca-Cola Bottling Co.*, 332 A.2d 1 (Md. 1975) (same); see generally FRUMER & FRIEDMAN, *supra* note 7, § 48.08[3][a].

particularly if it is found in a package, can, or other container sealed at the defendant's place of business.²⁵³ In an early case of this type, in which the plaintiff encountered a human toe in a can of chewing tobacco, the court had little difficulty in finding an inference of negligence: "We can imagine no reason why, with ordinary care, human toes could not be left out of chewing tobacco, and if toes are found in chewing tobacco, it seems to us that somebody has been very careless."²⁵⁴

2. *Warranty*

In cases involving foodstuffs, as any type of product, warranty claims have the distinct advantage over negligence that proof of the defendant's fault is not necessary.²⁵⁵ Although express warranty actions are unusual in foodstuff cases, occasionally they do arise.²⁵⁶ Thus, when a seller of canned chicken advertises its product as "boned chicken" that contains "no bones," a consumer injured by a bone sliver lurking in the chicken may recover for the seller's false affirmations of fact.²⁵⁷ Much more typical in food cases are claims for breach of the implied warranty of quality or wholesomeness.²⁵⁸ This latter form of warranty, now encompassed by the implied warranty of merchantability, provides a strict, no-fault basis for liability under the Uniform Commercial Code.²⁵⁹ While the sealed-container doctrine,²⁶⁰ privity,²⁶¹ and other sales law restrictions sometimes limit the reach of warranty law claims, the courts have long and widely used the law of warranty to provide relief

253. *Res ipsa* has long been applied in this situation. See, e.g., *Dryden v. Cont'l Baking Co.*, 77 P.2d 833 (Cal. 1938) (allowing *res ipsa* in "glass" case); *Richenbacher v. Cal. Packing Corp.*, 145 N.E. 281, 202 (Mass. 1924) (same); see also *Minutilla v. Providence Ice Cream*, 144 A. 884, 887 (R.I. 1929) (noting that although *res ipsa* did not apply, inference of manufacturer's negligence arose from presence of glass in ice cream served in its original package).

254. *Pillars v. R.J. Reynolds Tobacco Co.*, 78 So. 365, 366 (Miss. 1918).

255. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, §§ 4:1, 4:5, 5:9.

256. See, e.g., *Cott v. Peppermint Twist Mgmt. Co.*, 856 P.2d 906, 911-12 (Kan. 1993) (involving claim of express warranty where night club waitress told patrons that drink was "good" whereas it was dishwashing detergent containing lye).

257. See *Lane v. C.A. Swanson & Sons*, 278 P.2d 723, 726 (Cal. Ct. App. 1955).

258. See, e.g., *Jones v. GMRI, Inc.*, 551 S.E.2d 867, 869 (N.C. Ct. App. 2001) (involving a breach of implied warranty where foreign object found in food); *Otis Spunkmeyer, Inc. v. Blakely*, 30 S.W.3d 678, 681-82 (Tex. Ct. App. 2000) (same).

259. See U.C.C. § 2-314 (1987); 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 4:5.

260. This doctrine may preclude warranty claims against retailers. See, e.g., *Jones*, 551 S.E.2d at 870-71 (upholding judgment for restaurant on implied warranty claim on basis of statutory sealed-container defense).

261. This doctrine may preclude warranty claims against remote sellers. See, e.g., *Barnett v. Leiserv, Inc.*, 968 F. Supp. 690 (N.D. Ga. 1997) (barring warranty action brought by child, burned by hot coffee purchased and spilled by family friend in restaurant, because of lack of privity); *Minutilla v. Providence Ice Cream*, 144 A. 884, 885 (R.I. 1929) ("[T]here can be no warranty without privity of contract").

to persons injured by defective food and drink.²⁶²

3. *Strict Liability in Tort*

With the rise of the doctrine of strict products liability in tort in the 1960s and 1970s, problems of establishing negligence and satisfying the technical rules of warranty law fell away in cases involving foodstuffs as in other types of products.²⁶³ While negligence and warranty claims are still frequently asserted in foodstuff cases,²⁶⁴ various advantages of strict liability in tort²⁶⁵ make this doctrine the preferred theory of recovery in most such cases. Thus, purveyors of food or drink have been held subject to strict liability in tort for injuries from mice in soft drink bottles,²⁶⁶ contaminated oysters,²⁶⁷ a metal screw in a stick of chewing gum,²⁶⁸ a pebble in a biscuit,²⁶⁹ MSG in soup,²⁷⁰ human blood in a biscuit and gravy,²⁷¹ and many other situations involving defective food and drink.²⁷²

Regardless of the particular cause of action, two issues of proof frequently predominate in foodstuff cases: defectiveness and causation. The burden of proof

262. See, e.g., *Clime v. Dewey Beach Enters.*, 831 F. Supp. 341, 348–49 (D. Del. 1993) (allowing claim for breach of warranty); *Cott v. Peppermint Twist Mgmt. Co.*, 856 P.2d 906, 932 (Kan. 1993) (same); *Creach v. Sara Lee Corp.*, 331 S.C. 461, 464, 502 S.E.2d 923, 924 (Ct. App. 1998) (same); see generally DICKERSON, *supra* note 48, at 19-170 (discussing food claims and warranty law); FRUMER & FRIEDMAN, *supra* note 7, §§ 48.15-19.

263. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, ch. 5.

264. See, e.g., *Knight v. Just Born, Inc.*, No. CV-99-606-ST, 2000 WL 924624 at *3 (D. Or. Mar. 28, 2000) (involving negligence and strict liability in tort); *Holowaty v. McDonald's Corp.*, 10 F. Supp. 2d 1078, 1081 (D. Minn. 1998) (involving negligence, implied warranty, and strict liability in tort); *Campbell Soup Co. v. Gates*, 889 S.W.2d 750, 752 (Ark.1994) (involving negligence, implied warranty, express warranty, and strict liability in tort); *Creach*, 331 S.C. at 463, 502 S.E.2d at 923 (same); *Cott*, 856 P.2d at 912 (same); *Otis Spunkmeyer, Inc. v. Blakely*, 30 S.W.3d 678, 681 (Tex. Ct. App. 2000) (involving implied warranty and strict liability in tort).

Negligence and breach of warranty are the only claims available in states that have never adopted the doctrine of strict products liability in tort. See, e.g., *Goldman v. Food Lion, Inc.*, 879 F. Supp. 33 (E.D. Va. 1995) (involving a pit in canned peach); *Clime v. Dewey Beach Enters.*, 831 F. Supp. 341, 348–49 (D. Del. 1993) (involving bacteria in clams); *Jones v. GMRI, Inc.*, 551 S.E.2d 867, 869 (N.C. Ct. App. 2001) (involving metal in meatball).

265. See 1 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 5:9.

266. See *Shoshone Coca-Cola Bottling Co. v. Dolinski*, 420 P.2d 855 (Nev. 1966).

267. See *Kilpatrick v. Superior Court*, 277 Cal. Rptr. 230, 232 (Ct. App. 1991).

268. See *Hickman v. Wm. Wrigley, Jr. Co.*, 768 So. 2d 812 (La. Ct. App. 2000).

269. See *Creach*, 502 S.E.2d at 923-24.

270. See *Livingston v. Marie Callender's, Inc.*, 85 Cal. Rptr. 2d 528, 529 (Ct. App. 1999).

271. See *Flagstar Enters., Inc. v. Davis*, 709 So. 2d 1132, 1133-34 (Ala. 1997).

272. See, e.g., *Knight v. Just Born, Inc.*, No. V-99-606-ST, 2000 WL 924624 (D. Or. Mar. 28, 2000) (involving chemical burns to mouth from piece of Hot Tamale cinnamon candy containing concentrated cinnamon oil); see generally *Draper*, *supra* note 221, at 1 (discussing cases involving liability for spoiled or contaminated food); *Draper*, *supra* note 221, at 189 (discussing cases involving liability for object related to but not intended to be in food); *Valenti v. Great Atl. & Pac. Tea Co.*, 615 N.Y.S.2d 84, 85 (App. Div. 1994) (“[T]he plaintiff [has] the burden of proving that the food was defective.”).

on both issues, of course, resides on the plaintiff.²⁷³

C. Proving Defectiveness—In General

To recover for injuries from ingesting food or drink, a plaintiff must establish that the food contained some dangerous element that rendered it unwholesome or “defective.”²⁷⁴ The concept of defectiveness in food and drink cases is basically the same as in other contexts. Thus, a food or beverage item generally is defective, and a seller generally is subject to liability in negligence, warranty, and strict liability in tort for selling it, if the food product’s condition is dangerous in a manner not intended by the seller nor expected by the consumer. As with any other type of product, a person injured by food or drink must establish its defectiveness—in this context, that it was unwholesome,²⁷⁵ unfit for human consumption,²⁷⁶ adulterated,²⁷⁷ or contained a foreign or otherwise dangerous substance of a type that consumers generally do not expect.²⁷⁸

Sometimes a foodstuff’s defectiveness is very clear, as when a soft drink contains slivers of glass,²⁷⁹ a condom,²⁸⁰ a slimy substance,²⁸¹ a moth,²⁸² or a mouse;²⁸³ a meatball contains a piece of metal,²⁸⁴ a can of pork and beans contains

273. See, e.g., *Cooper v. Borden, Inc.*, 709 So. 2d 878, 881 (La. Ct. App. 1998) (explaining that to establish manufacturer’s liability for harm from food consumption, plaintiff must prove that: (1) defendant’s product contained deleterious substance; (2) plaintiff consumed the substance; and (3) the consumption caused the plaintiff’s injury); *Valenti*, 615 N.Y.S.2d at 85 (“[T]he plaintiff [has] the burden of proving that the food was defective.”).

274. See, e.g., *Mann v. D.L. Lee & Sons, Inc.*, 537 S.E.2d 683, 684 (Ga. Ct. App. 2000) (holding that although plaintiffs probably suffered food poisoning, insufficient evidence that defendant’s ham was defective).

275. See, e.g., *Slonsky v. Phoenix Coca-Cola Bottling Co.*, 499 P.2d 741, 742 (Ariz. Ct. App. 1972) (involving metallic filings in bottle of Coke); *Sowell v. Hyatt Corp.*, 623 A.2d 1221, 1222 (D.C. Ct. App. 1993) (involving a worm in rice).

276. See, e.g., *Johnson v. Epstein*, No. 96-CV-215 1998 WL 166805, at *2 (N.D.N.Y. Apr. 10, 1998) (involving a “foreign substance that was revolting or unfit for human consumption”); *Goldman v. Food Lion, Inc.*, 879 F. Supp. 33, 36 (E.D. Va. 1995) (involving warranty that food is “fit for human consumption”).

277. “Adulterated” is a common description of the condition in which food may not be sold under pure food acts. See, e.g., *Chambley v. Apple Rests. Inc.*, 504 S.E.2d 551 (Ga. Ct. App. 1998) (involving condom in chicken salad).

278. See *infra* Part IV.D.

279. See *Peryea v. Coca-Cola Bottling Co.*, 286 A.2d 877, 878 (R.I. 1972).

280. See *Hagan v. Coca-Cola Bottling Co.*, 804 So. 2d 1234, 1236 (Fla. 2001).

281. See *Cernes v. Pittsburg Coca-Cola Bottling Co.*, 332 P.2d 258, 260 (Kan. 1958).

282. See *Simmons v. Baton Rouge Coca-Cola Bottling Co.*, 282 So. 2d 827, 828 (La. App. 1973).

283. The early soft drink intruder cases were collected in Arthur N. Bishop, Jr., *Trouble in a Bottle*, 16 BAYLOR L. REV. 337, 362 (1964), which classified the cases in various respects. Glass was the most frequent intruder into beverage bottles, followed by mice in the following conditions and numbers: dead—16; dead, “fur oozing” Coca-Cola—1; “dead and putrid”—2; dead, “badly battered”—1; decayed—2; decomposed—14; decomposed and swollen—1; skeleton only—1;

a condom;²⁸⁵ a can of spinach,²⁸⁶ a bowl of soup,²⁸⁷ or a candy bar²⁸⁸ is infested with worms; or a chili dog contains a cockroach.²⁸⁹ Where a food's defectiveness is plain, unless the danger was so open and obvious that it should have been apparent to the consumer,²⁹⁰ its manifest deficiency renders it unwholesome, unfit, and defective by any standard. In such cases, unless causation is in doubt, food suppliers generally should want to avoid litigation unless the plaintiff's settlement demand is excessive. In other situations, the defectiveness of a foodstuff's dangerous condition may be in doubt. In the hot coffee cases, for example, most courts rule as a matter of law that a hot drink's propensity to burn is not a defective condition but an obvious risk that must be born by those who drink hot beverages.²⁹¹ Similarly, a food's defectiveness often is subject to challenge if the hazard naturally occurs in the particular food, as a chicken bone in chicken soup, an issue examined below.

A plaintiff, of course, must establish that the food product really did contain an improper substance, a fact which the plaintiff's testimony may establish.²⁹² But the plaintiff's uncorroborated testimony that he or she swallowed a bug is not the strongest type of evidence, and so a plaintiff who swallows or otherwise disposes of the objectionable item, as a piece of metal or other hard object in a meatball²⁹³ or in a dish of barbecued spareribs,²⁹⁴ may find the lawsuit traveling a route quite similar.²⁹⁵ Yet, even if the plaintiff has no direct evidence of a defect in the food,

small—1; unspecified—9. Flies, spiders, worms, and cockroaches also appeared with some frequency. *Id.* Led by Louisiana, the "top" eight states (by number of reported cases) all were in the South. *Id.* at 339.

284. See *Jones v. GMRI, Inc.*, 551 S.E.2d 867, 869 (N.C. Ct. App. 2001).

285. See *Gentry v. Stokely-Van Camp, Prod. Liab. Rep. (CCH) ¶ 9259* (Tenn. Ct. App. 1982).

286. See *Food Fair Stores v. Macurda*, 93 So. 2d 860 (Fla. 1957).

287. See *Campbell Soup Co. v. Gates*, 889 S.W.2d 75, 7510 (Ark. 1994).

288. See *Kassouf v. Lee Bros., Inc.*, 26 Cal. Rptr. 276, 277 (Ct. App. 1962) (describing plaintiff "bit[ing] into a mushy worm. When she looked at the bar, she saw that it was covered with worms and webbing; worms were crawling out of the chocolate and the webbing had little eggs 'hanging onto it.'").

289. See *Bullara v. Checker's Drive-In Rest., Inc.*, 736 So. 2d 936, 937 (La. Ct. App. 1999).

290. In *Harris-Teeter, Inc. v. Burroughs*, 399 S.E.2d 801, 801-02 (Va. 1991), the plaintiff's daughter-in-law went to the grocery store and bought a birthday cake decorated with two white plastic birds resting on white "clouds" which were part of the cake's design. Plaintiff ate a piece of the cake, white bird and all, swallowing it whole without chewing. Quite soon she realized that she had a problem, and the bird was surgically removed from her colon. Applying the plain view doctrine, the court held that there was no negligence in supplying a cake ornament the same color as the icing. *Id.* at 802-03.

291. See, e.g., *Olliver v. Heavenly Bagels, Inc.*, 729 N.Y.S.2d 611, 612-13 (Sup. Ct. 2001) (discussing other coffee burn cases and granting summary judgment for the defendant).

292. See, e.g., *Johnson v. Epstein*, No. 96-CV-215 (RSP/ONH), 1998 WL 166805, at *1 (N.D.N.Y. 1998) (involving a crustacean attached to mackerel in can shown to others).

293. See *Jones v. GMRI, Inc.*, 551 S.E.2d 867, 869 (N.C. Ct. App. 2001).

294. See *Kneibel v. RRM Enters.*, 506 N.W.2d 664, 665 (Minn. Ct. App. 1993).

295. The plaintiffs' testimony was found insufficient in *Farroux v. Denny's Rest., Inc.*, 962 S.W.2d 108, 109-10 (Tex. Ct. App. 1997) (involving an affidavit of restaurant patron, allegedly sickened from undercooked eggs, which conflicted with his own deposition, where medical records

defectiveness properly may be established by circumstantial evidence and credible expert testimony that the defendant's food probably was defective.²⁹⁶

D. The Foreign/Natural and Consumer Expectations Tests

Defectiveness is clear enough, as mentioned earlier, when food or drink contains a foreign object, such as glass, or steel, or bugs, or when the food is spoiled²⁹⁷ or otherwise contaminated.²⁹⁸ Yet the parties' expectations and legal responsibility may be quite different with respect to hazards that are natural to certain types of food, such as clamshells in clam chowder, cherry pits in cherry pies, and fish bones in fish filets. To the extent that such naturally occurring objects are dangerous, food purveyors ordinarily attempt to keep them out of the food and drink they sell. But sometimes their efforts are unsuccessful and a food consumer is injured by a naturally occurring object of this type. The question in such cases is whether the food should be considered defective or whether such naturally occurring objects should be expected and thus the responsibility of the food consumer.²⁹⁹

1. The Rise of the Foreign/Natural Doctrine

In *Mix v. Ingersoll Candy Co.*,³⁰⁰ decided by the California Supreme Court in 1936, the plaintiff was injured from swallowing a fragment of a chicken bone

contained no evidence of food poisoning but only showed that he suffered from obesity and gout), as well as in *Valenti v. Great Atl. & Pac. Tea Co.*, 615 N.Y.S.2d 84, 85 (App. Div. 1994) (involving flu-like symptoms after eating beans allegedly containing worm, where no mention of worm during visit to doctor next day).

296. See, e.g., *Gant v. Lucy Ho's Bamboo Garden, Inc.*, 460 So. 2d 499, 501 (Fla. Dist. Ct. App. 1984) (involving food poisoning from egg rolls; doctor testified that the bacteria involved is usually transmitted from fecal matter of infected person and that the egg rolls were the probable source); *Mushatt v. Page Milk Co.*, 262 So. 2d 520, 522 (La. Ct. App. 1972); *Trapnell v. John Hogan Interests, Inc.*, 809 S.W.2d 606, 609 (Tex. App. 1991) (involving expert testimony, based on reasonable medical probability, that permitted the conclusion that fatal allergic reaction was triggered by sulfite potato whiteners).

297. See, e.g., *Swift & Co. v. Wells*, 110 S.E.2d 203, 204 (Va. 1959) (involving staphylococci organisms in pork shoulder); *Prejean v. Great Atl. & Pac. Tea Co.*, 457 So. 2d 60, 61 (La. Ct. App. 1984) (involving rotten roast).

298. See, e.g., *Claxton Coca-Cola Bottling Co. v. Coleman*, 22 S.E.2d 768 (Ga. Ct. App. 1942) (involving kerosene in Coke); *Cooper v. Borden, Inc.*, 709 So. 2d 878, 880 (La. Ct. App. 1998) (involving penicillin in milk).

299. See generally PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 7 (restating law for "Liability of Commercial Seller . . . for Harm Caused by Defective Food Products"); Getz, *supra* note 221, at 637 (applauding repudiation of foreign/natural doctrine in *Nestle-Beich*); Lehmann, *supra* note 221, at 481 (pleading and proving food foreign contaminant cases); Vanderpool, *supra* note 221, at 379 (discussing the Louisiana court's repudiation of foreign/natural doctrine in *Porteous* and explaining that it is consistent with state Products Liability Act); Draper, *supra* note 221, at 189 (examining liability for object related to but not intended to be in food).

300. 59 P.2d 144 (Cal. 1936).

contained in a chicken pie sold and served by the defendant restaurant to the plaintiff. The plaintiff sued the restaurant for negligence and breach of implied warranty, alleging that the food was not reasonably fit to eat. The trial court dismissed the claims, and the plaintiff appealed. Stating that the defendant's obligation in warranty was only to sell food that was *reasonably* fit, not perfect, the court upheld the dismissal of the complaint.³⁰¹ While the court acknowledged that even slight deviations from perfection may sometimes cause a food to be legally unfit, it reasoned that "in certain instances a deviation from perfection, particularly if it is of such a nature as in common knowledge could be reasonably anticipated and guarded against by the consumer, may not be such a defect as to result in the food being not reasonably fit for human consumption."³⁰² Observing that the warranty cases holding food unfit involved foreign substances such as glass, stones, wires, nails, or foods that were tainted, decayed, diseased, or infected, the court remarked that warranty law could not hold restaurateurs liable for serving a fish dish with a fish bone, a cherry pie with a cherry stone, or T-bone steaks or beef stew with bones "natural to the type of meat served."³⁰³ Hence, "[b]ones which are natural to the type of meat served cannot legitimately be called a foreign substance, and a consumer who eats meat dishes ought to anticipate and be on his guard against the presence of such bones."³⁰⁴ Thus, because such naturally occurring risks are to be expected by the food consumer, neither implied warranty³⁰⁵ nor negligence compels a restaurant to assure that its chicken pies are perfectly free of chicken bones.³⁰⁶

The *Mix* approach to liability for naturally occurring hazards in food and drink, which came to be known as the "foreign/natural" test or doctrine, held that sellers are subject to liability for injuries from objects that are "foreign" to a food's ingredients, but that consumers should expect and thereby bear the risks of hazards that are in some way "natural" to the food.³⁰⁷ At a time when rules of law were an accepted judicial method for avoiding jury trials in recurring situations where responsibility was clear,³⁰⁸ the foreign/natural doctrine appeared to be a sensible way for courts to short-circuit needlessly repetitive litigation. As time went by, a number of jurisdictions adopted the doctrine and applied it to such perils as bones and bone slivers in dressing served with a roast turkey dinner,³⁰⁹ a pork chop,³¹⁰

301. *Id.* at 147.

302. *Id.* at 147-48.

303. *Id.* at 148.

304. *Id.*

305. The result is different under express warranty if the seller affirms that the product is "boned chicken" which has "no bones." *See, e.g., Lane v. C.A. Swanson & Sons*, 278 P.2d 723, 726 (Cal. Ct. App. 1955) (allowing claim under express warranty).

306. *Mix*, 59 P.2d at 148.

307. *Id.*

308. *See generally* DAN B. DOBBS, *THE LAW OF TORTS* § 132 (2000) (discussing "rule of law" and the courts' authority to direct a verdict); W. PAGE KEETON ET AL., *supra* note 177, § 35.

309. *Silva v. F.W. Woolworth Co.*, 83 P.2d 76, 76 (Cal. Ct. App. 1938).

310. *Brown v. Nebiker*, 296 N.W. 366, 367 (Iowa 1941).

creamed chicken,³¹¹ barbecue pork sausage,³¹² and fish chowder;³¹³ a piece of broken prune pit in a jar of prune butter;³¹⁴ a crystallized grain of corn in a box of Corn Flakes;³¹⁵ and an unshelled filbert in a jar of shelled nuts.³¹⁶

2. *The Shift to a Consumer Expectations Test*

Although a number of courts applied the foreign/natural doctrine as a method for determining the defectiveness of food in certain types of cases, the test never was adopted in more than a handful of jurisdictions. In 1951, America's leading food-law scholar, Professor Reed Dickerson, argued that the foreign/natural inquiry should be rejected in favor of a determination of consumer expectations.³¹⁷ And during the 1950s, courts began to manifest their discontent with the doctrine's applicability to processed foods by refocusing the inquiry away from whether the offending object naturally and initially occurred in some ingredient of the food to whether it was appropriate to the food as it ultimately was served.³¹⁸ This shift in analytical approach narrowed the doctrine into oblivion by allowing claims for bones in chicken soup,³¹⁹ sausage,³²⁰ and canned chicken labeled "boned."³²¹ Moreover, at least a couple of fairly early decisions rejected the foreign/natural test outright, reasoning that the decisive issue should not be whether an ingredient was natural or foreign to the food at some stage of preparation, but whether the consumer might reasonably expect to find such a substance in the type of food

311. *Goodwin v. Country Club of Peoria*, 54 N.E.2d 612, 613 (Ill. App. Ct. 1944).

312. *Norris v. Pig'n Whistle Sandwich Shop*, 53 S.E.2d 718, 720 (Ga. Ct. App. 1949).

313. *Webster v. Blue Ship Tea Room, Inc.*, 198 N.E.2d 309, 312 (Mass. 1964) (offering a history of and several recipes for New England chowder (a "gustatory adventure") and observing: "We should be prepared to cope with the hazards of fish bones, the occasional presence of which in chowders is, it seems to us, to be anticipated, and which, in the light of a hallowed tradition, do not impair their fitness or merchantability.").

314. *Courter v. Dilbert Bros.*, 186 N.Y.S.2d 334, 336 (Sup. Ct. 1958).

315. *Adams v. Great Atl. & Pac. Tea Co.*, 112 S.E.2d 92, 93 (N.C. 1960).

316. *See Coffey v. Standard Brands, Inc.*, 226 S.E.2d 534, 535 (N.C. Ct. App. 1976).

317. "The better test of what is legally defective appears to be what consumers customarily expect and guard against. Canned foods are expected to be found already washed, cleaned, and trimmed, while the same foods in fresh form normally call for work of that sort by the consumer." *See DICKERSON, supra* note 48, at 185.

318. *See infra* notes 319-21.

319. *See Wood v. Waldorf Sys., Inc.*, 83 A.2d 90, 93 (R.I. 1951).

[Even if chicken bones were necessary to the preparation of chicken soup], the question is not whether the substance may have been natural or proper at some time in the early stages of preparation of this kind of soup, but whether the presence of such substance, if it is harmful and makes the food unfit for human consumption, is natural and ordinarily expected to be in the final product which is impliedly represented as fit for human consumption.

Id.

320. *Lore v. De Simone Bros.*, 172 N.Y.S.2d 829 (Sup. Ct. 1958).

321. *Bryer v. Rath Packing Co.*, 156 A.2d 442, 444 (Md. 1959).

involved.³²²

As modern principles of products liability law established a foothold in the 1960s and 1970s, criticism of the foreign/natural doctrine accelerated. During this period, courts and commentators began to recognize the inconsistency between the *caveat emptor* principles inherent in this doctrine and the consumer protection objectives of modern products liability law.³²³ As time progressed, courts in the 1980s and 1990s increasingly adopted a reasonable³²⁴ consumer expectations standard, often explicitly rejecting the foreign/natural doctrine, for determining the defectiveness of food.³²⁵ Typical of these decisions was *Jackson v. Nestle-Beich*,

322. See, e.g., *Bonenberger v. Pittsburgh Mercantile Co.*, 28 A.2d 913, 914 (Pa. 1942) (involving oyster shell in can of oysters); *Betehia v. Cape Cod Corp.*, 103 N.W.2d 64, 67 (Wis. 1960) (involving chicken bone in chicken sandwich).

323. See, e.g., *Hochberg v. O'Donnell's Rest., Inc.*, 272 A.2d 846, 848–49 (D.C. Ct. App. 1971) (involving pit in olive); *Zabner v. Howard Johnson's, Inc.*, 201 So. 2d 824, 826 (Fla. Dist. Ct. App. 1967) (involving walnut shell in maple walnut ice cream: "Naturalness of the substance to any ingredients in the food served is important only in determining whether the consumer may reasonably expect to find such substance in the particular type of dish or style of food served."); *Stark v. Chock Full O'Nuts*, 356 N.Y.S.2d 403, 404 (App. Div. 1974) (involving walnut shell in nutted cheese sandwich); *Williams v. Braum Ice Cream Stores, Inc.*, 534 P.2d 700, 701 (Okla. Ct. App. 1974) (involving cherry seed or pit in cherry-pecan ice cream); *Jim Dandy Fast Foods, Inc. v. Carpenter*, 535 S.W.2d 786, 790 (Tex. App. 1976) (involving piece of bone in chicken meat); *Betehia v. Cape Cod Corp.*, 103 N.W.2d 64, 67–68 (Wis. 1960) (recognizing "reasonable expectation" test). Compare *O'Dell v. DeJean's Packing Co.*, 585 P.2d 399, 401–02 (Okla. Ct. App. 1978) (whether plaintiff should have expected to find deleterious item in packaged food is defense for pleading and proof by seller). See generally *Draper*, *supra* note 221, at 189 (examining "foreign/natural" test cases); *Spangenberg*, *supra* note 216 (suggesting Ohio should adopt the reasonable expectations test).

324. Note that the standard is framed in terms of a *reasonable* consumer's expectations, which is an objective rather than a subjective test. See, e.g., *Phillips v. Town of West Springfield*, 540 N.E.2d 1331 (Mass. 1989) (applying reasonable expectations of an ordinary high school student). See also *Williams*, 534 P.2d at 700 (holding that there was an additional question of fact whether individual plaintiff acted in a reasonable manner).

325. See, e.g., *Clime v. Dewey Beach Enters.*, 831 F. Supp. 341, 348 (D. Del. 1993) ("[T]he foreign natural test is an outdated relic."); *Yong Cha Hong v. Marriott Corp.*, 656 F. Supp. 445, 448 (D. Md. 1987) (noting that reasonable expectations test "had largely displaced the natural/foreign test"); *Morrison's Cafeteria of Montgomery, Inc. v. Haddox*, 431 So. 2d 975, 978 (Ala. 1983) (stating that the foreign substance test is flawed because it does not account for consumer expectations); *Jackson v. Nestle-Beich, Inc.*, 589 N.E.2d 547, 549 (Ill. 1992) (explaining that foreign-natural test is an "outdated and discredited doctrine"); *Phillips*, 540 N.E.2d at 1332–33 ("The reasonable expectations test has been generally recognized as preferable to the foreign substance–natural substance test."); *Langiulli v. Bumble Bee Seafood, Inc.*, 604 N.Y.S.2d 1020, 1021 (Sup. Ct. 1993) (explaining that the reasonable expectation, not the foreign-natural test, should be applied); *Goodman v. Wenco Foods Inc.*, 423 S.E.2d 444, 451 (N.C. 1992) (giving a thorough discussion of foreign-natural test issues); *Gates v. Standard Brands Inc.*, 719 P.2d 130, 134 (Wash. Ct. App. 1986) (adopting "buyer oriented" consumer expectations test).

The legal commentators unanimously agree. See Michael J. Spak, *Bone of Contention: The Foreign–Natural Test and the Implied Warranty of Merchantability for Food Products*, 12 J.L. & COM. 23 (1992); Brent R. Eller, Note, *Tort Law–Products Liability–Implied Warranties–Foods*–*Goodman v. Wenco Foods, Inc.*, 33 N.C. 1, 423 S.E.2d 444 (1992), 71 N.C. L. REV. 2163 (1993); Charles R. James, Note, *Products Liability—The Test of Consumer Expectations*

Inc.,³²⁶ a carefully reasoned decision of the Illinois Supreme Court which adopted a reasonable consumer expectations test. There, the court rebuffed the defendant's invitation to adopt Louisiana's then-existing³²⁷ middle-of-the-road approach (subsequently adopted in California)³²⁸ shielding food sellers from strict liability, but not negligence, for dangers naturally occurring in food products.³²⁹ In the mid-1990s,³³⁰ the propriety of the shift from the foreign/natural doctrine to a consumer expectations test was certified by the American Law Institute in the *Products Liability Restatement*.³³¹ In recent years, courts have rarely applied the foreign/natural doctrine as a liability determinative rule,³³² and the judicial march

For "Natural" Defects in Food Products, 37 OHIO ST. L.J. 634 (1976); Stacy L. Majica, Note, *Breach of Implied Warranty: Has the Foreign/Natural Test Lost its Bite?*, 20 MEM. ST. U. L. REV. 377 (1990); Vanderpool, *supra* note 221, at 379.

326. 589 N.E.2d 547 (Ill. 1992).

327. Louisiana abandoned this approach in *Porteous v. St. Ann's Cafe & Deli*, 713 So. 2d 454, 457 (La. 1998), which shifted to a negligence analysis that weighs the naturalness of an item's presence in food together with consumer expectations.

328. In *Mexicali Rose v. Superior Court*, 822 P.2d 1292, 1303 (Cal. 1992) (chicken bone in enchilada), the California Supreme Court replaced the *Mix* doctrine with the following:

If the injury-producing substance is natural to the preparation of the food served, it can be said that it was reasonably expected by its very nature and the food cannot be determined unfit or defective. A plaintiff in such a case has no cause of action in strict liability or implied warranty. If, however, the presence of the natural substance is due to a restaurateur's failure to exercise due care in food preparation, the injured patron may sue under a negligence theory.

If the injury-causing substance is foreign to the food served then the injured patron may also state a cause of action in implied warranty and strict liability, and the trier of fact will determine whether the substance (i) could be reasonably expected by the average consumer and (ii) rendered the food unfit or defective.

329. For the traditional Louisiana cases, see, for example, *Title v. Pontchartrain Hotel*, 449 So. 2d 677 (La. Ct. App. 1984) (holding restaurant not liable for allowing pearl to remain in fried oyster) and *Musso v. Picadilly Cafeterias, Inc.*, 178 So. 2d 421, 428 (La. Ct. App. 1965) (holding restaurant not negligent in failing to remove every pit in cherry pie).

330. In 1995, Tentative Draft No. 2 of the *Products Liability Restatement* § 2, comment g suggested that the consumer expectations test was the majority rule. The far more decisive rejection of the foreign/natural test in favor of the consumer expectations test first appeared as a separate section in the Proposed Final Draft in 1997, and the *Restatement* was published in final form in 1998.

331. The *Products Liability Restatement* § 7 provides:

One engaged in the business of selling or otherwise distributing food products who sells or distributes a food product that is defective under § 2, § 3, or § 4 is subject to liability for harm to persons or property caused by the defect. Under § 2(a), a harm-causing ingredient of the food product constitutes a defect if a reasonable consumer would not expect the food product to contain that ingredient.

PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 7. In comment b, the Reporters note: "A consumer expectations test in this context relies upon culturally defined, widely shared standards that food products ought to meet." *Id.* § 7 cmt. b.

332. For remnants of the foreign/natural doctrine, see *Mitchell v. T.G.I. Friday's*, 748 N.E.2d 89 (Ohio Ct. App. 2000), in which the court schizophrenically applies both tests in line with Ohio's equivocal approach. See also *Ford v. Miller Meat Co.*, 33 Cal. Rptr. 899 (Ct. App. 1994), in which

toward the reasonable consumer expectations test appears inexorable.

In summary, modern courts have rejected the foreign/natural distinction as too rigid a rule of law for assessing the defectiveness of food. While restricting liability for natural hazards to appropriate negligence claims³³³ arguably strikes a nuanced balance between consumer and seller obligations, most courts today prefer the blunter but simpler consumer expectation protection approach of the type adopted by the *Products Liability Restatement*. Absent from most discussions of the battle between these two food defect tests is a recognition of the specially high protection the law historically has afforded food consumers, as discussed above. Perhaps the disappearance from common discourse of the high priority of food safety reflects the fact that consumers in the world today confront a host of deadly dangers—mechanical, chemical, and biological—which might suggest that food products no longer deserve an elevated level of protection. Yet, perhaps, food safety should still be viewed as a necessary first goal in the kind of broader human safety plan the law must now construct. Be that as it may, food safety remains a vital social goal that undoubtedly is better protected by the reasonable consumer expectations test, which now is plainly the prevailing legal doctrine,³³⁴ than the foreign/natural doctrine which properly is on the run.

3. Court and Jury

Even with the decline of the foreign/natural test, which is nearing extinction as a general test of liability, the “naturalness” of a dangerous item’s presence in a food necessarily lingers on as an important sub-issue in assessing reasonable expectations in particular contexts—that is, in determining just what types of dangers consumers justifiably should be required to expect in certain types of foods.³³⁵ While the task of ascertaining such expectations normally is peculiarly well suited for jury resolution,³³⁶ reasonable consumer expectations sometimes are

the court held that a bone fragment was a natural substance to be anticipated in beef.

333. This is the former rule in Louisiana that is now applied in California. *See supra* notes 327-29.

334. *See* PRODUCTS LIABILITY RESTATEMENT, *supra* note 7, § 7 cmt. b, Reporters’ Note 1 (explaining that a “strong majority of courts” have applied the reasonable consumer expectations test).

335. Reasonable expectations is also used in determinations of how carefully a consumer should chew. *See, e.g.,* Hochberg v. O’Donnell’s Rest., Inc., 272 A.2d 846, 847 (D.C. 1971) (involving a restaurant patron who broke his tooth on a pit in an olive served in a vodka martini). *Cf.* Scheller v. Wilson Certified Foods, Inc., 559 P.2d 1074, 1081 (Ariz. Ct. App. 1976) (finding seller of smoked pork not liable for death from trichinosis because it is common knowledge that pork must be cooked prior to consumption; plaintiff thought pork already had been cooked).

336. *See, e.g.,* Yong Cha Hong v. Marriott Corp., 656 F. Supp. 445, 448-49 (D. Md. 1987) (deciding whether the presence of a worm-like trachea or aorta in fast-food fried chicken fell below reasonable consumer expectations was question of fact); Phillips v. Town of West Springfield, 540 N.E.2d 1331 (Mass. 1989) (allowing the trier of fact to determine the reasonable expectations of ordinary high school student concerning the likely presence of a bone in his meal); Williams v. Braum Ice Cream Stores, Inc., 534 P.2d 700 (Okla. Ct. App. 1974); *see generally* Getz, *supra* note 221, at 637 (discussing recent developments in food manufacturers’ liability).

so clear that courts should take the issue from the jury. For example, in an early case that rejected the foreign/natural test and embraced the consumer expectations test as the formal liability standard, the court nevertheless ruled as a matter of law that the consumer should have expected to find an oyster shell in a serving of fried oysters.³³⁷ More recently, courts have held as a matter of law that consumers *should* expect that a fish fillet might contain a one-centimeter bone,³³⁸ that a can of clam chowder³³⁹ or fried clam strip³⁴⁰ might contain a piece of clam shell, that a raw clam served in a restaurant might contain harmful bacteria,³⁴¹ and that a cake might contain a strand of human hair.³⁴² The contrary is also true: courts should rule as a matter of law for food consumers who have no reason to expect a particular food hazard, such as a lethally sharp sliver of bone in a fried strip of chicken, “natural” though it might be. Modern courts have begun to reassert control over juries in a variety of ways,³⁴³ and the decline of the foreign/natural doctrine in favor of a consumer expectations test should not be viewed as a wholesale shift of power from judge to jury. Instead, the battle lines for judicial rulings in foodstuff cases have simply shifted—away from classifying food hazards as “foreign” vs. “natural,” to case-specific judicial rulings on when consumers, as a matter of law, should be required to expect natural hazards in the foodstuffs that they eat.

E. Proving Causation

Even if a plaintiff can establish that a food or drink ingested was dangerously defective, the plaintiff still must connect the defect both to the defendant and to the plaintiff’s injury or illness.³⁴⁴

1. Linking Foodstuff to Defendant

It is fundamental, of course, that a seller is responsible for an injury only if the seller was responsible for the defect—that is, only if the defect was in the product

337. *Allen v. Grafton*, 164 N.E.2d 167, 174 (Ohio 1960) (4-3 decision); *see also Mathews v. Maysville Seafoods Inc.*, 602 N.E.2d 764, 765–66 (Ohio Ct. App. 1991) (finding that plaintiff’s case failed under either test since “a consumer must reasonably anticipate and guard against the presence of a fish bone in a fish fillet.”).

338. *Morrison’s Cafeteria of Montgomery, Inc. v. Haddox*, 431 So. 2d 975, 979 (Ala.1983).

339. *See Koperwas v. Publix Supermarkets, Inc.*, 534 So. 2d 872, 873 (Fla. Dist. Ct. App. 1988).

340. *See Mitchell v. T.G.I. Friday’s*, 748 N.E.2d 89, 95 (Ohio Ct. App. 2000).

341. *Clime v. Dewey Beach Enters.*, 831 F. Supp. 341, 349 (D. Del. 1993). *But see Ayala v. Bartolome*, 940 S.W.2d 72, 732-337 (Tex. Ct. App. 1997) (deciding whether an ordinary consumer would expect raw oysters to be contaminated with bacteria fatal to persons with liver disease is a fact issue for the jury).

342. *See Cain v. Winn-Dixie La., Inc.*, 757 So. 2d 712, 715 (La. Ct. App. 1999).

343. *See generally William Powers, Jr., Judge and Jury in the Texas Supreme Court*, 75 TEX. L. REV. 1699 (1997) (discussing the proper role of courts in defining legal duties).

344. *See, e.g., Meyer v. Super Discount Mkts., Inc.*, 501 S.E.2d 2, 6 (Ga. Ct. App. 1998) (involving food poisoning); *Cooper v. Borden, Inc.*, 709 So. 2d 878, 881 (La. Ct. App. 1998) (finding evidence supported assertion that penicillin was in milk that caused consumer’s allergic reaction).

when it left the seller's control.³⁴⁵ Thus, even if the plaintiff proves that a Baby Ruth candy bar contained a pin, the plaintiff still may be unable to meet his burden of proving that the pin was in the candy bar when it left the defendant's candy factory if the manufacturer introduces evidence of the rigorous quality control procedures at its plant.³⁴⁶ Often, time is of the essence in establishing causation of this type. If a plaintiff discovers maggots, "[l]ittle bitty worms with a black head," floating and squiggling in chicken-flavored soup made from a dry mix sold by the defendant manufacturer six weeks prior to the plaintiff's purchase, she cannot recover if the larvae might reasonably have entered the soup between the time when the defendant sold it and when her mother bought and prepared it.³⁴⁷

But a plaintiff need not prove the defendant's responsibility for the defect beyond all doubt; the plaintiff may recover if the evidence, including reasonable inferences from any circumstantial evidence, suggests the likelihood that the defect was in the product at the time the defendant sold it.³⁴⁸ Thus, a plaintiff may recover if she bites into a cockroach in a chili dog she had purchased earlier at a fast-food restaurant if she establishes that she ate the dog shortly after she got home and before her own household roaches had time to crawl inside.³⁴⁹ And while a jokester conceivably may cram a mouse into a soft drink bottle after it leaves the bottling plant, a jury may reasonably interpret dark fecal stains at the bottom of the bottle as suggesting that the mouse resided in the bottle long before that point.³⁵⁰

2. *Linking Foodstuff to Plaintiff's Harm*

In order to link an injury or illness to a defective foodstuff, a plaintiff first must connect the injury or illness to a particular food item sold by the defendant and, further, show that it was bad.³⁵¹ When a person becomes ill shortly after eating, the

345. See, e.g., *Mears v. H.J. Heinz Co.*, No. 02A 01-9403-CV-00058, 1995 WL 37344 (Tenn. Ct. App. Jan. 31, 1995) (noting that a sliver of tin plate in bowl of soup that could have come from sources other than defendant's control, even though expert testified that ninety percent of tin plate is used in manufacture of tin cans).

346. See *Tardella v. RJR Nabisco, Inc.*, 576 N.Y.S.2d 965 (App. Div. 1991) (involving a pin in Baby Ruth candy bar; in view of defendant's detailed evidence of rigorous quality control procedures, plaintiff failed to meet burden of proof that a pin was in the candy bar when it left defendant's plant).

347. *Campbell Soup Co. v. Gates*, 889 S.W.2d 750, 751 (Ark. 1994).

348. See, e.g., *Flagstar Enters., Inc. v. Davis*, 709 So. 2d 1132 (Ala. 1997) (involving blood in take-out order of biscuits and gravy); *Slonsky v. Phoenix Coca-Cola Bottling Co.*, 499 P.2d 741, 744 (Ariz. Ct. App. 1972) (involving metallic filings in bottle of Coke; bottle appeared to be properly sealed, and no other evidence of tampering); *Cooper*, 709 So. 2d at 881 (finding evidence supported claim that penicillin was in the milk); *Cohen v. Allendale Coca-Cola Bottling Co.*, 291 S.C. 35, 38, 351 S.E.2d 897, 899 (Ct. App. 1986) (Bell, J.) (finding that plaintiff's testimony that the bug was lying on the bottom of the bottle, that it might have been partially decomposed, and that no bugs were flying around his office on the fateful October day was sufficient circumstantial evidence that bug was in bottle at defendant's plant).

349. See *Bullara v. Checker's Drive-In Rest.*, 736 So. 2d 936 (La. Ct. App. 1999).

350. See *Shoshone Coca-Cola Bottling Co. v. Dolinski*, 420 P.2d 855, 858 (Nev. 1966).

351. See 2 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 7, § 12:1.

natural tendency is to associate the illness with the foods or beverages the person recently consumed. If any of the food remained unconsumed, it often is discarded, which means that no samples may remain to test and analyze to ascertain whether the food was good or bad. In such cases, courts properly allow plaintiffs to go to the jury if they offer reasonable circumstantial evidence of defectiveness, such as that a particular food item smelled or tasted strange.³⁵² Yet without credible evidence suggesting that a particular food item was in fact defective, the plaintiff's case quite properly will fail.³⁵³

In addition to showing that a particular food item was defective, the plaintiff must also link the defective food product to the harm. In many cases, the causal link between defective foodstuff and a plaintiff's harm is undisputed, as when the plaintiff immediately is injured or sickened from consuming food that clearly is defective, as a sirloin steak containing the tip end of a hypodermic needle³⁵⁴ or a chili dog containing a cockroach.³⁵⁵ But if the connection between defective food or drink and a person's illness is not self-evident, as often is the case, expert testimony may be required to establish the causal link between the defect and the harm.³⁵⁶

A plaintiff who proves all three elements—(1) that food or drink was defective, (2) that the manufacturer was responsible for the defect, and (3) that the defect proximately caused the harm—may recover damages for the harm.³⁵⁷ If a plaintiff

352. See, e.g., *Knight v. Just Born, Inc.*, No. CV-99-606-ST, 2000 WL 924624, at *13 (D. Or. Mar. 28, 2000) (finding that a burned mouth was evidence sufficient to establish that one piece of Hot Tamale cinnamon candy produced chemical burns from concentrated cinnamon oil).

353. "A person claiming injury from consuming allegedly unwholesome food must show a causal link between that food and the resulting illness." *Mann v. D.L. Lee & Sons, Inc.*, 537 S.E.2d 683, 684 (Ga. Ct. App. 2000) (finding that although plaintiffs probably suffered food poisoning, there was insufficient evidence that defendant's ham was defective).

Given that no laboratory test performed on the Manns revealed any pathogen responsible for their symptoms, that the Manns consumed other foods at the same time they ate the ham, and that the ham itself was not available for testing but had not looked, smelled, or tasted bad, the Manns could not carry their burden of excluding every other reasonable hypothesis as to the cause of their illness.

Id. at 225. See also *Meyer v. Super Discount Mkts.*, 501 S.E.2d 2, 4 (Ga. Ct. App. 1998) ("[A] mere showing that a person became sick subsequent to eating food is insufficient."); *Fuggins v. Burger King*, 760 So. 2d 605 (La. Ct. App. 2000) (holding that evidence was insufficient to establish that defendant's illness was food poisoning and, if so, whether it had any connection to the hamburger sold by defendant).

354. See *Kroger Co. v. Beck*, 375 N.E.2d 640, 642 (Ind. Ct. App. 1978) (causing a prick in plaintiff's throat that caused her to vomit).

355. See *Bullara*, 736 So. 2d at 938.

356. See, e.g., *Arbours v. Sweet Basil Bistro, Inc.*, 740 So. 2d 186 (La. Ct. App. 1999) (finding that in food poisoning case, testimony by treating doctors that plaintiff's infection probably was caused by ingestion of raw chicken at defendant restaurant was sufficient to establish causation).

357. See, e.g., *Cooper v. Borden, Inc.*, 709 So. 2d 878, 881 (La. Ct. App. 1998) (allowing plaintiff to recover damages for allergic reaction to penicillin in milk after proving all three elements).

bites off the head of a mouse³⁵⁸ or a cockroach³⁵⁹ hiding in a sandwich, the plaintiff normally can recover damages for emotional distress.³⁶⁰ Even if nothing is eaten of the intruder or even of the foodstuff, the plaintiff still may establish causation in most jurisdictions by proof that he or she was sickened by observing, touching, or smelling (and thinking about) the mouse, bug, spoilage, or other offending condition.³⁶¹ As with other types of products, damages for lost consortium are available on proper proofs.³⁶²

358. Plaintiff bought a barbecue sandwich from a vending machine, heated it in a microwave oven, and took a bite. She heard "an awful crunch," opened the sandwich and discovered a small mouse with a small tail, but no head. She sued, and the jury awarded damages of \$10,000. GREENVILLE NEWS (S.C.), Feb. 24 & 25, 1993.

359. *Bullara*, 736 So. 2d at 937 (involving a customer who bit into cockroach in a chili dog).

360. *See, e.g., Brayman v. 99 West, Inc.*, 116 F. Supp. 2d 225, 233-34 (D. Mass. 2000) (holding that the plaintiff, cut in the throat by a piece of glass hidden in mashed potatoes, could recover for past and future pain and suffering, emotional distress, anxiety, mental anguish, embarrassment and loss of enjoyment of life); *Way v. Tampa Coca-Cola Bottling Co.*, 260 So. 2d 288 (Fla. App. 1972) (involving a plaintiff who, while sucking the partially frozen contents out of a bottle of Coke, encountered a "rat with the hair sucked off" and allowing damages for emotional distress).

361. *See, e.g., Sowell v. Hyatt Corp.*, 623 A.2d 1221 (D.C. Ct. App. 1993) (finding defendant liable for a worm in rice that plaintiff almost ate); *Chambley v. Apple Rests., Inc.*, 504 S.E.2d 551 (Ga. Ct. App. 1998) (involving a condom in chicken salad); *Prejean v. Great Atl. & Pac. Tea Co.*, 457 So. 2d 60 (La. App. 1984) (involving a rotten roast that was "green as grass"); *Wallace v. Coca-Cola Bottling Plants, Inc.*, 269 A.2d 117, 118, 120-21 (Me. 1970) (involving an unpackaged prophylactic in Coke); *see also Cohen v. Allendale Coca-Cola Bottling Co.*, 291 S.C. 35, 37-38, 351 S.E.2d 897, 898-99 (Ct. App. 1986) (Bell, J.) (finding "psychic nausea" from discovering insect in soft drink).

To recover for emotional distress in most jurisdictions, the plaintiff must establish that the emotional distress caused or was caused by some injury, illness, or other physical condition. *See, e.g., Ellington v. Coca-Cola Bottling Co. of Tulsa, Inc.*, 717 P.2d 109 (Okla. 1986) (permitting a plaintiff to recover for emotional distress from observing a piece of "Good-n-Plenty" candy, which she thought was a worm, in her bottle of Coke because her distress caused nausea, diarrhea, dehydration, kidney infection, and fever). *Cf. Ford v. Aldi, Inc.*, 832 S.2d 1 (Mo. Ct. App. 1992) (involving a plaintiff, who, while eating spinach she had prepared, became ill and threw up after discovering a three-quarter inch insect on her fork). In Missouri, plaintiffs no longer must prove physical harm to recover for emotional distress, but the distress must be "medically diagnosable" or "medically significant." *Id.* at 2. The court held that because plaintiff admitted to having suffered no injury and to having had insufficient reason to consult a doctor, summary judgment should be affirmed. *Id.* at 2-3. At least Maine and Florida have abolished the physical injury requirement for recovery in cases involving emotional distress caused by the consumption of contaminated food. *See Hagan v. Coca-Cola Bottling Co.*, 804 So. 2d 1234 (Fla. 2001); *Culbert v. Sampson's Supermarkets Inc.*, 444 A.2d 433 (Me. 1982).

362. *See, e.g., Knight v. Just Born, Inc.*, No. CV-99-606-ST, 2000 WL 924624, at *13 (D. Or. Mar. 28, 2000) (allowing damages for wife's loss of consortium when husband suffered severe chemical burns to mouth from eating Hot Tamale candy); *Bullara*, 736 So. 2d at 936 (noting that for a few months after she bit into a cockroach in a chili dog, wife was not in the mood for sex and husband had to cook and eat alone).

V. CONCLUSION

Manufacturing defects from errors in production are normally quite easy to understand. Because physical flaws often can be established by the manufacturer's own design specifications, defects of this type often are also quite easy to prove. But products involved in accidents sometimes are destroyed in the accident, discarded thereafter, or otherwise disappear. In such cases, the physical evidence to prove or disprove that the accident was attributable to a production error may vanish with the product. Mirroring *res ipsa loquitur*, the malfunction doctrine, which in recent years has spread silently across the nation, now provides a safe harbor for plaintiffs whose injuries probably were caused by manufacturing defects, the tangible proofs of which have left this world.

Centuries in the past, cases involving the sale of contaminated food and drink gave birth to early products liability law. The types of foodstuffs consumed today have multiplied enormously, and modern products liability law still must deal with the hazards of contaminated food and drink. The defectiveness of food and drink is now widely ascertained by a consumer's reasonable expectations, and an injured consumer must trace the injury to such a defect and to the defendant food supplier.

Responsibility for manufacturing defects is the most fundamental obligation of product manufacturers. The law governing production errors is now quite settled, and it remains the first pillar of modern products liability law.

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