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PLAINTIFF’S BURDEN OF PROVING ENHANCED INJURY IN CRASHWORTHINESS CASES: A CLASH WORTHY OF ANALYSIS

Barry Levenstam and Daryl J. Lapp*

INTRODUCTION

It is well settled that the manufacturer of a defective product may be held liable for a portion of a plaintiff’s injuries in cases where the product itself played no role in causing the plaintiff’s initial accident. This now-familiar concept is known as the “crashworthiness” or “second collision” doctrine of product liability. Under this doctrine, the manufacturer may be held liable for a plaintiff’s “enhanced” or aggravated injuries—those injuries over and above the injuries the plaintiff would have sustained as a result of the initial accident absent the product defect. Although the conceptual framework of crashworthiness liability has been in place for two decades, a deep division persists among courts applying the doctrine. The courts disagree as to the appropriate burden to be placed on the plaintiff in proving the existence and extent of enhanced injury.

Part I of this Article describes the crashworthiness or second collision doctrine of liability, and provides an introduction to the split of authority with respect to plaintiff’s burden of proof. Part II reviews the more rigorous approach, which requires the plaintiff to offer specific proof that the alleged product defect was the sole cause of a particular enhanced or aggravated harm. To meet this burden, the plaintiff must show what injuries would have resulted from the initial collision absent the alleged defect. The plaintiff thus bears the full burden of distinguishing between first collision and second collision injuries.

The opposing view, presented in Part III, adopts a less rigorous approach, requiring that the plaintiff show only that the alleged defect was a substantial factor in causing some aspect of plaintiff’s harm. Once the plaintiff has made this prima facie showing, courts following this approach treat the product manufacturer as a concurrent tortfeasor jointly liable to the plaintiff along with the party responsible for causing the initial accident. The manufacturer can limit its liability only if it can show that the plaintiff’s injuries are capable of apportionment between the first collision and second collision. Where the injury is found to be indivisible, however, the manufacturer remains jointly liable for the entire extent of the plaintiff’s harm.

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In Part IV, this Article asserts that the more rigorous, sole factor standard of proving enhanced injury is the better reasoned approach. Requiring that the plaintiff provide specific proof of enhancement by demonstrating the extent to which the injuries would have been less severe absent the defect is more consistent with the conceptual underpinnings of the crashworthiness doctrine and with the broader themes of product liability law in general. This approach allows the manufacturer to be held liable for plaintiff's enhanced injuries, but properly limits that liability to second collision injuries only. The substantial factor approach too often subjects the manufacturer to liability for plaintiff's first collision injuries as well.

In addition, the doctrine of apportionment among joint tortfeasors, which provides the foundation of the less rigorous substantial factor approach, is doctrinally ill-suited to second collision cases. Placing the burden of injury apportionment on the manufacturer as a concurrent tortfeasor mistakenly assumes that the manufacturer is in fact a tortfeasor. The manufacturer in a second collision case should not be held liable unless the plaintiff first proves the existence of an enhanced injury. Moreover, the related concept of indivisible injury is similarly inappropriate in the second collision context. Holding the manufacturer liable for the entire amount of plaintiff's harm on the ground that plaintiff's injury is indivisible, and thus incapable of apportionment, is at odds with the very essence of crashworthiness liability. The very nature of the plaintiff's claim for relief—an injury over and above that which would have occurred absent the defect—contemplates an apportionment between injuries caused by the first collision and those caused by the second collision.

I. THE SECOND COLLISION OR CRASHWORTHINESS DOCTRINE

A. The Concept of Enhanced Injury

The "second collision" or "crashworthiness" doctrine allows an injured plaintiff to hold a manufacturer liable for a product defect that did not

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1. 'Crashworthiness' means 'the protection that a passenger motor vehicle affords its passengers against personal injury or death as a result of a motor vehicle accident.'

The term "second collision" usually refers to the collision between a passenger and an interior part of the vehicle following an impact or collision. The term also has been applied to ejection cases. In which the second collision is between the occupant of the car and the ground.


cause the initial accident, but enhanced or aggravated the plaintiff's injuries.

Since manufacturers are already under a duty to construct vehicles that are free of latent defects, \textit{MacPherson v. Buick Motor Co.,} 217 N.Y 382, 111 N.E. 1050 (1916), it follows that the manufacturer's liability for injuries proximately caused by these defects should not be limited to collisions in which the defect causes the accident, but should extend to situations in which the defect caused injuries over and above that which would have occurred from the accident, but for the defective design.\textsuperscript{2}

Unlike the typical product liability case, the defect in a second collision case would not have caused any injury without some "independent act" that set "the injury producing cycle into motion."\textsuperscript{3} The source of this original independent act is irrelevant to recovery if the manner in which the product was used is deemed "reasonably foreseeable."\textsuperscript{4}

A defective product can lead to the enhancement of a plaintiff's injuries in several ways: (1) the defect may actually cause the second collision, as when a defectively designed door latch or seat belt allows an occupant to be ejected from the vehicle and strike the pavement or another object; (2) the defect may be in the surfaces or components of the product with which the occupant collides, such as a dashboard or steering column; or (3) the structural properties of the product may fail to adequately protect the plaintiff in a reasonably foreseeable accident, as when a roll bar or roof support collapses under relatively small forces.\textsuperscript{5} Regardless of the particular

\textsuperscript{2} Caiazzo, 647 F.2d at 245 (citing Larsen v. General Motors Corp., 391 F.2d 495 (8th Cir. 1968)); Bohm v. Triumph Corp., 33 N.Y.2d 151, 305 N.E.2d 769, 350 N.Y.S.2d 644 (1973). See also Barris, 685 F.2d at 99 (3d Cir. 1982) ("The crashworthiness doctrine extends the manufacturer's liability to situations in which the defect did not cause the accident or initial impact, but rather increased the severity of the injury over that which would have occurred absent the defect. . .") (citations omitted).

\textsuperscript{3} Richardson v. Volkswagenwerk, A.G., 552 F. Supp. 73, 79-80 (W.D. Mo. 1982). See also Jeng v. Witters, 452 F. Supp. 1349, 1355 (M.D. Pa. 1978). "[A] manufacturer may be held liable for only those injuries shown to have been caused or enhanced by a defective condition of a product in the course of or following an initial accident brought about by some independent cause." Id. As one commentator notes, "in a crashworthiness case, the manufacturer has not caused an injury-producing event, but it is alleged to have failed to take reasonable steps to prevent the injury producing effects of such an event." Note, \textit{Litigating Enhanced Injury Cases: Complex Issues, Empty Precedents, and Unpredictable Results,} 54 U. CIN. L. REV. 1257, 1258 (1986) [hereinafter, Note, \textit{Litigating Enhanced Injury Cases}].

\textsuperscript{4} Richardson, 552 F. Supp. at 79-80. See also Barris, 685 F.2d at 99. "In crashworthiness cases, the courts [have] adher[ed] to the rule that strict liability attaches only when a product is used in a foreseeable manner. . ." Id.

\textsuperscript{5} Although the crashworthiness claimant "typically is an injured occupant of a vehicle which has been involved in an accident," nonoccupants, including pedestrians or motorcyclists, have also made claims of injury enhancement. Hoenig, supra note 1, at 636 n.9 (citations omitted). Moreover, not all crashworthiness cases involve a "second" collision. Foland, \textit{Enhanced Injury: Problems of Proof in "Second Collision" and "Crashworthy" Cases,} 16 WASHBURN L.J. 600, 606 n.30 (1977) (citing Kahn v. Chrysler Corp., 221 F. Supp. 677 (S.D. Tex. 1963) (boy riding bicycle collided with tail fin of automobile); Hatch v. Ford Motor Co., 163 Cal. App. 2d 393, 329 P.2d 605 (1958) (child walked into pointed hood decoration on parked car)).
type of second collision, the manufacturer is liable under the "crashworthi-
ness" doctrine only for the amount of plaintiff's enhanced injury: "the
degree by which a defect aggravates collision injuries beyond those which
would have been sustained as a result of the impact on collision absent the
defect." 

B. The Development of the Second Collision Doctrine: Larsen v. General
Motors Corp.

Prior to the development of the second collision doctrine, a plaintiff could
only recover for injuries caused by a manufacturer's product that was
defective for its intended use. An automobile manufacturer's duty was
limited to ensuring that its car was reasonably fit for its intended purpose,
namely, transportation. This principle is best exemplified by Evans v. General
Motors Corp., in which the Seventh Circuit Court of Appeals refused to hold a
manufacturer liable for enhanced injuries caused by a
defective design.

In Evans, the plaintiff argued that the defendant's use of an "X" frame
for its automobile, rather than a frame with side rails, caused the death of
her husband when his car was struck from the left side by another auto-
mobile. Plaintiff contended that collisions were foreseeable and, therefore,
the defendant had a duty to make an automobile with side rails in order to
protect occupants during collisions. The court rejected the plaintiff's theory
and held that, although collisions are foreseeable, this foreseeability did not
create a duty on the part of the manufacturer to equip its automobile with

6. Barris, 685 F.2d at 100.
7. See generally Chiardi, supra note 1, at 2.
8. Id. See also Ford Motor Co. v. Zahn, 265 F.2d 729 (8th Cir. 1959) (ashtray on dashboard
had defectively jagged edge which inflicted injuries when brakes were suddenly applied); Carpini
v. Pittsburgh & Weirton Bus Co., 216 F.2d 404 (3d Cir. 1954) (because part of the brake
system of bus was located too close to ground it broke off and caused brakes to fail);
defective wheel fell off automobile causing it to collapse).
9. 359 F.2d 822 (7th Cir.), cert. denied, 385 U.S. 836 (1966). The Seventh Circuit subse-
quently overruled Evans in Huff v. White Motor Corp., 565 F.2d 104, 109 (7th Cir. 1977)
(applying Indiana law).
10. 359 F.2d at 823-24. Plaintiff's three-count complaint alleged negligence, breach of
implied warranty, and strict liability:

Plaintiff asserts that defendant was negligent in designing and in failing to test the
design of the automobile; that defendant breached implied warranties that the
automobile was of merchantable quality and reasonably fit for use as an automobile;
that the defendant placed in the stream of commerce an automobile in a dangerous
and defective condition in that it was equipped with an "X" frame lacking side
frame protection, thus proximately causing the fatal injuries to the decedent when
the automobile was involved in a broadside collision, for which the defendant is
strictly liable to plaintiff.

Id. at 824.
11. Id.
side rail frames. The court reasoned that "[t]he intended purpose of an automobile does not include its participation in collisions." The court noted that although requiring manufacturers to make collision-proof cars was "desirable," imposing such a duty was a function for the legislature. Justice Kiley dissented from the majority in *Evans.* He emphasized the large number of automobile accidents in the United States each year, and argued that an automobile manufacturer had a duty to design its automobiles to give "reasonable protection . . . against death and injury from accidents which are expected and foreseeable yet unavoidable by the purchaser despite careful use." Two years after *Evans* was decided, the Eighth Circuit first adopted the second collision doctrine in the seminal case of *Larsen v. General Motors Corp.*

In *Larsen,* the plaintiff was driving a 1963 Corvair when he was involved in a head-on collision. The impact on the left front corner of the Corvair caused the steering mechanism to thrust backward into the plaintiff's head. The plaintiff did not contend that the car's design caused the accident. Rather, the plaintiff argued that the car's design caused injuries in addition to, or more severe than, those he otherwise would have received if not for the defective design. The defendant manufacturer, relying principally on *Evans,* argued that it had no duty to design a vehicle that was "safe" or "safer" during a head-on collision. The trial court in *Larsen* agreed and further held that the manufacturer had no duty to warn of the alleged latent or inherently dangerous condition of the vehicle. According to the court, a duty to warn arises only when a defect "would render the product unsafe for its intended use." Because the intended use of the product in this case was "transportation" and not head-on collisions, General Motors had no

12. Id. at 825. In holding that the foreseeability of collisions did not create additional duties upon the automobile manufacturer, the court made the following analogy: "the defendant also knows that its automobiles may be driven into bodies of water, but it is not suggested that the defendant has a duty to equip them with pontoons." Id.
13. Id. at 824. As one commentator has noted, the argument that the imposition of additional duties upon a manufacturer is a legislative responsibility was one of the principal public policy arguments advanced against the second collision doctrine. Ghiardi, supra note 1, at 4. Other arguments included: "(1) the possibility of a large flood of litigation against automobile manufacturers; (2) the difficulty that juries would have in properly evaluating the complex economic engineering data that would be presented." Id.
14. 359 F.2d at 825 (Kiley, J., dissenting).
15. Id. at 827 (Kiley, J., dissenting).
16. 391 F.2d 495 (8th Cir. 1968).
17. Id. at 496-97.
18. Id. at 497.
20. 391 F.2d at 497.
21. Id. at 498. "The District Court . . . rendered summary judgment in favor of General Motors on the basis that there was no common law duty on the manufacturer 'to make a vehicle which would protect the plaintiff from injury in the event of a head on collision' and dismissed the complaint." Id. at 497.
duty to warn of allegedly defective design of the steering assembly.\textsuperscript{22} The Eighth Circuit, however, rejected this view of "intended use" as "much too narrow and unrealistic."\textsuperscript{23} The court concluded:

While automobiles are not made for the purpose of colliding with each other, a frequent and inevitable contingency of normal automobile use will result in collisions and injury-producing impacts. No rational basis exists for limiting recovery to situations where the defect in design or manufacturer was the causative factor of the accident, as the accident and the resulting injury, usually caused by the so-called "second collision" of the passenger with the interior part of the automobile, all are foreseeable.\textsuperscript{24}

The court held that the manufacturer could not be held liable for the full extent of the plaintiff's injuries if the defect did not cause the initial accident.\textsuperscript{25} However, if the defective design enhanced or aggravated the plaintiff's injuries, "the manufacturer should be liable for that portion of the damages or injury caused by the defective design over and above the damage or injury that probably would have occurred as a result of the impact or collision absent the defective design."\textsuperscript{26}

The Fourth Circuit in \textit{Dreisonstok v. Volkswagenwerk, A.G.},\textsuperscript{27} also recognized the second collision doctrine, and refined the \textit{Larsen} analysis by limiting the role of foreseeability by defining the parameters of the manufacturer's duty. The \textit{Dreisonstok} court emphasized that the foreseeability of automobile collisions did not "create a duty on the part of the manufacturer to design its car to withstand such collisions \textit{under any circumstances}."\textsuperscript{28} The \textit{Dreisonstok} court interpreted \textit{Larsen}'s articulation of the manufacturer's duty as whether the design embodied an ""unreasonable risk of injury in the event of a collision," not foreseeability of collision."\textsuperscript{29} The concept of "unreasonable risk" necessarily involves a balancing of factors: the likelihood of harm; the gravity of harm if it occurs; the burden of preventing the harm and; the utility and purpose of the particular type of vehicle involved.\textsuperscript{30}

\textsuperscript{22} \textit{Id.}
\textsuperscript{23} \textit{Id.} at 502.
\textsuperscript{24} \textit{Id.} "The effect of the crashworthiness doctrine is that a manufacturer has a legal duty to design and manufacture its product to be reasonably crashworthy. . . . In terms of strict product liability, this means that a manufacturer has to include accidents among the 'intended' uses of its product." \textit{Barris}, 685 F.2d at 100 (citing \textit{Huddell v. Levin}, 537 F.2d 726, 735 (3d Cir. 1976); \textit{Olson v. United States}, 521 F. Supp. 59, 63 (E.D. Pa. 1981)).
\textsuperscript{25} \textit{Id.} at 503.
\textsuperscript{26} \textit{Id.}
\textsuperscript{27} 489 F.2d 1066 (4th Cir. 1974).
\textsuperscript{28} \textit{Id.} at 1070 (emphasis in original). The court stated, "Foreseeability, it has been many times repeated, is not to be equated with duty; it is . . . one factor, albeit an important one, to be weighed in determining the issue of duty." \textit{Id.} See also \textit{Yetter v. Rajeski}, 364 F. Supp. 105, 108 (D.N.J. 1973) (because foreseeability is but one of several factors determinative of duty, "the scope of duty is not coextensive with foreseeability").
\textsuperscript{29} \textit{Id.} at 1070 (quoting \textit{Larsen}, 391 F.2d at 502).
\textsuperscript{30} \textit{Id.}
THE CRASHWORTHINESS DOCTRINE

Most jurisdictions now have adopted the Larsen—Dreisonstok view of a manufacturer’s liability for enhanced injuries suffered in a second collision.31 One commentator has reported that “[o]nly one state court has followed Evans since Dreisonstok was decided, and there is now undisputed precedent adopting Evans in only two states32 while thirty-five states and the District of Columbia follow Larsen.”33

31. See Harris, supra note 1, at 644; Ropiequet, Current Issues Under the ‘Second Collision’ Doctrine, For The Def., Oct. 1983, at 12, 14; Note, Litigating Enhanced Injury Cases, supra note 3, at 1257. Although Larsen itself was a negligence case, “[i]n the wake of Larsen, courts have recognized crashworthiness to be actionable in negligence, strict liability and breach of warranty.” Duran v. General Motors Corp., 101 N.M. 742, 688 P.2d 779, 782 (Ct. App. 1983) (citing Annotation, Liability of Manufacturer, Seller, or Distributor of Motor Vehicle for Defect Which Merely Enhances Injury From Accident Otherwise Caused, 42 A.L.R.3d 560 (1972)).


C. Plaintiff’s Burden of Proof: The Split in Authority

Jurisdictions that recognize the second collision doctrine universally concur in two important corollaries of that doctrine. First, because the allegedly defective product played no role in causing the plaintiff’s initial accident, the manufacturer can be held liable only for enhanced or aggravated injuries that would not have occurred absent the alleged defect in the product, and cannot be held liable for injuries attributable to the initial collision. Second, the plaintiff bears the burden of proving that the alleged defect caused the enhanced injuries. The courts have split rather dramatically, however, over the degree of proof a plaintiff is required to provide to meet this burden. At its most basic level, the argument is whether the plaintiff should be required to show that the alleged design defect is the sole cause of plaintiff’s enhanced injury, or merely a substantial factor in causing the aggravated harm.

34. Caiazzo v. Volkswagenwerk, A.G., 647 F.2d 241, 250 n.16 (2d Cir. 1981) (“The decisions [on second collision liability] are in agreement that the manufacturer is liable only for the enhanced injuries, and that a plaintiff must prove some causation between the alleged defect and the enhanced injuries.”); Richardson v. Volkswagenwerk, A.G., 552 F. Supp. 73, 80 (W.D. Mo. 1982) (“The courts have uniformly held in second collision cases that the plaintiff also bears the burden of proving causation—that the manufacturer’s defective product enhanced the injuries sustained in the accident.”); Annotation, Products Liability: Sufficiency of Proof of Injuries Resulting from “Second Collision,” 9 A.L.R.4th 494, 497 (1981) (collecting cases).

35. The Caiazzo court described the split in authority this way:

One group of decisions . . . requires a plaintiff to distinguish between those injuries that are attributable to the accident and those that are attributable to the design defect. . . .

Other jurisdictions have ruled that a plaintiff need not prove the nature and extent of the enhanced injuries, . . . but need only offer ‘any evidence of enhancement’ to present a jury issue.


“Reduced to simplicity, the issue is whether a plaintiff must prove that the manufacturer’s defective product was the sole factor or a substantial factor in producing the plaintiff’s enhanced injuries.” Richardson v. Volkswagenwerk, A.G., 552 F. Supp. 73, 81 (W.D. Mo. 1982). See also Lee v. Volkswagen of Am., Inc., 688 P.2d 1283, 1287 (Okl. 1984); Note, Litigating Enhanced Injury Cases, supra note 3, at 1264-69.

Although noting that there are two main approaches to plaintiff’s burden of proof, one commentator has described several levels of proof that have been applied when the injury to plaintiff is indivisible. The range among the levels of proof is as follows, listed in order of difficulty:

1. Once plaintiff proves the defect was a contributing (not substantial) factor in producing plaintiff’s indivisible injuries, the burden of proof shifts to the defendant.
2. The plaintiff must prove some evidence of enhancement of injury.
3. The plaintiff must prove that the defendant’s product was a substantial factor in producing plaintiff’s injuries.
4. The plaintiff must prove the defect caused or enhanced his injuries.
5. The plaintiff must prove not only which injuries were caused by the defect,
Under the sole factor approach the plaintiff must prove with some degree of particularity the extent of the injuries that resulted from the initial collision. The plaintiff thus bears the full burden of distinguishing between first collision and second collision injuries. Without such proof, the plaintiff cannot establish that the design has caused any enhancement or aggravation of injuries.36

The opposing line of authority rejects this position as imposing too harsh a burden on the plaintiff. The substantial factor approach merely requires the plaintiff to make a prima facie showing of enhancement. If the plaintiff can demonstrate that the alleged defect played a substantial factor in causing some injuries, the issue of second collision liability may go to the jury. The burden shifts to the manufacturer to apportion the injuries between those resulting from the initial collision and those caused by the product's design in the second collision.37 Where the injury is said to be indivisible, however, this apportionment is deemed neither possible nor appropriate, and the manufacturer, whose product played no role in the initial accident, is held jointly liable for the entire extent of the plaintiff’s harm.38

II. PRODUCT DEFECT AS THE SOLE CAUSE OF PLAINTIFF’S ENHANCED INJURY

A. The Sole Factor Approach: Huddell v. Levin

The leading case adopting the “sole cause” approach is Huddell v. Levin.39 Huddell was driving his 1970 Chevrolet Nova across a bridge when his car ran out of gas. He brought the car to a full stop in the left-most lane of traffic, where it was struck from behind by a Chrysler sedan traveling between 50 and 60 miles per hour. The collision caused Huddell’s head to strike the head restraint on the driver’s seat at a speed of ten miles per hour. This blow resulted in a fractured skull and extensive brain damage which led to Huddell’s death one day after the accident. Other than the fatal blow against the head restraint, Huddell suffered only minor injuries.40

At trial, the plaintiff contended that Huddell’s death resulted from a defect in the design of the head restraint. Specifically, the plaintiff argued that a “relatively sharp edge of unyielding metal allowed for excessive concentration of forces against the rear of the skull.”41 The jury found for

but what injuries he would have received absent the defect, and what injuries he would have received by his suggested alternative design.

Norman, The Crashworthiness Case, 17 TRIAL LAW. Q. 16(4) at 31 (1986).
36. See infra notes 47-63 and accompanying text.
37. See infra notes 99-102 and accompanying text.
38. See infra notes 103-06 and accompanying text.
39. 537 F.2d 726 (3d Cir. 1976).
40. Id. at 732.
41. Id. at 735 (quoting from Appellee’s brief at 8). Mrs. Huddell, suing in her representative capacity, alleged that the defectively designed head restraint failed to provide adequate protection against a rear-end collision. Id. at 732.
the plaintiff and returned a verdict of over $2,000,000 against the manufacturer of the car.\textsuperscript{42}

The Third Circuit Court of Appeals vacated the judgment and remanded for a new trial.\textsuperscript{43} The court rejected the district court's conclusion that the plaintiff's burden was merely to prove that the design of the head restraint was a "substantial factor" in causing Huddell's death.\textsuperscript{44} The Third Circuit held that, in a second collision case, the plaintiff is required to provide "a highly refined and almost invariably difficult" proof of three necessary elements.\textsuperscript{45} First, the plaintiff must "offer proof of an alternative, safer design, practicable under the circumstances."\textsuperscript{46} Second, the plaintiff must offer proof of the extent of the injuries, if any, that he would have suffered had the alternative design been used.\textsuperscript{47} Finally, "as a corollary to the second aspect of proof," the plaintiff must "offer some method of establishing the extent of enhanced injuries attributable to the defective design."\textsuperscript{48}

The Third Circuit found that the plaintiff in Huddell had failed to satisfy the second and third elements of her prima facie case.\textsuperscript{49} Plaintiff's experts had testified that the accident would have been "survivable" if the head restraint had been designed to provide for distribution of the collision forces over a greater area of the body than just one portion of the skull.\textsuperscript{50} The Court held that this proof of enhancement was insufficient because the term "survivable" was not specifically defined, and there was no testimony to establish what Dr. Huddell's injuries would have been if he had survived.

\textsuperscript{42} Id. at 731.
\textsuperscript{43} Id. at 744.
\textsuperscript{44} 395 F. Supp. 64, 77 (D.N.J. 1975).
\textsuperscript{45} 537 F.2d at 737.
\textsuperscript{46} Id.
\textsuperscript{47} Id. In requiring plaintiff to offer proof of what injuries would have occurred if the alternative design had been used, the court in Huddell approved the reasoning of the district court in Yetter v. Rajeski, 364 F. Supp. 105 (D.N.J. 1973). In Yetter, the plaintiff brought a wrongful death suit based on the second collision doctrine, asserting that the decedent's death could have been prevented by the installation of a collapsible or non-rigid steering wheel assembly. Id. at 108. Plaintiff's proof was held insufficient because all of plaintiff's experts called to testify on the injury enhancement issue "were not physicians but were engineers." Id. at 109.

Particularly when we are dealing with a claim for enhanced injuries, it is absolutely necessary that the jury be presented with some evidence as to the extent of injuries, if any, which would have been suffered... had the plaintiff's hypothetical design been installed... The jury, without such testimony, is left only to speculate as to the injuries [the decedent] would have suffered if the energy-absorbing steering column had, in fact, been installed, and this could only have been established by competent medical testimony as to the forces which the human body could withstand without injury, or without injury to the extent suffered by [the decedent].

\textsuperscript{48} 537 F.2d at 738.
\textsuperscript{49} Id. The court noted that "having failed to establish satisfactorily the second aspect, a plaintiff necessarily must fail with regard to the third." Id.
\textsuperscript{50} Id.
the crash. Absent such proof, the plaintiff was unable to satisfy the second element of her prima facie case: the extent of injuries caused by the allegedly defective head restraint. There was, therefore, no basis upon which the jury could have assessed liability against the manufacturer for Huddell's death under the second collision doctrine.

Judge Rosenn concurred with the majority's holding that the case should be remanded to allow the plaintiff to prove enhancement. Judge Rosenn also adopted the first element of the majority's three-part standard of proof—the requirement of proof of a safer alternative design. However, he noted that under some circumstances, the second and third elements of proof would be "unreasonably burdensome" to an innocent plaintiff. Judge Rosenn argued that in those situations the burden of apportioning between the first and second collision injuries should be placed upon the defendants. He argued that where the party who caused the initial accident and the vehicle's manufacturer "have combined contemporaneously to cause the [plaintiff's] injuries," they can be treated as concurrent tortfeasors in accordance with the principles embodied in Restatement (Second) of Torts § 433B(2). Under those principles, a defendant seeking to limit his liability on the ground that the damages are capable of apportionment—i.e., an automobile manufacturer claiming that it is liable only for the separable amount of enhanced injury—has the burden of apportioning the harm.

In response to Justice Rosenn, the majority in Huddell rejected "the legal lore surrounding concurrent tortfeasor actions" as inapplicable to second

51. Id. For example, although one of plaintiff's medical experts testified that Dr. Huddell suffered no injury to vital organs other than the brain during the accident: this ignored the possibility that injury to those organs might have been more severe if the great forces of the collision had been more widely distributed over the head and body by an alternative head restraint design. It was not established whether the hypothetical victim of the survivable crash would have sustained no injuries, temporary injuries, permanent but insignificant injuries, extensive and permanent injuries, or possibly, paraplegia or quadriplegia. Id.

52. Id. The court concluded that "[w]ithout proof to establish what injuries would have resulted from a non-defective head restraint, the plaintiff could not and did not establish what injuries resulted from the alleged defect in the head restraint." Id.

53. Id.

54. Id. at 744 (Rosenn, J., concurring).

55. Id. (Rosenn, J., concurring).

56. Id. at 744, 745 (Rosenn, J., concurring). Justice Rosenn cited the "seminal case of Summers v. Tice in which the principle of concurrent tortfeasors was first enunciated." Id. at 745 (citing Summers v. Tice, 33 Cal. 2d 80, 199 P.2d 1 (1948)).

57. Id. at 745-46 (Rosenn, J., concurring):
The underlying rationale of the courts has been that justice is better served by allowing an innocent plaintiff to recover his entire damages from independent and concurrent wrongdoers, when he cannot reasonably apportion his damages, than by protecting a proven wrongdoer from possible overpayment. The burden is placed squarely upon the defendant to limit his liability in such circumstances.

Id. at 746 (Rosenn, J., concurring).
collision or enhanced injury cases. Concurrent tortfeasor principles are inapposite, the court reasoned, because the alleged tortfeasors in a second collision case—the party responsible for the initial collision and the manufacturer whose product allegedly has caused or aggravated plaintiff’s injury—have not combined contemporaneously or concurrently to cause the injuries. The court concluded that because the theory of liability against the manufacturer in a second collision case is one of enhanced injury, analogies “to concurrent actions combining to cause a single impact are simply not applicable.”

B. Cases Following the Huddell Approach

The standard announced in Huddell, which requires a plaintiff to prove that the alleged defect was the sole cause of plaintiff’s enhanced injury, has been expressly adopted in a number of jurisdictions. In Caiazzo v. Volkswagenwerk, A.G., the Second Circuit expressly adopted Huddell after an extensive analysis of the two lines of cases concerning the burden of proof of enhanced or aggravated injuries. In Caiazzo, the plaintiffs’ Volkswagen

58. Id. at 738.
59. "Second collision' cases do not implicate 'clearly established double fault' for the same occurrence.” Id. (emphasis in original).
60. Id. (emphasis in original).
63. Id. at 250. In its review, the Caiazzo court attempted to identify a consistent factual distinction between the two lines of cases. The court concluded that “[t]hose cases that place the burden of apportionment on the manufacturer either involve second collision injuries that are clearly distinguishable from those suffered during the initial collision . . . or involve a wrongful death action,” while “[d]ecisions that place the burden of proving the nature and extent of the injuries on the plaintiff tend to involve injuries such as broken bones, which are alleged to have been made more severe because of the defect.” Id. at n.16.

Upon closer examination, however, this “factual distinction” between the two lines of cases quickly breaks down. Huddell, for example, the leading case for the position that plaintiff should bear the burden of apportionment on the manufacturer either involve second collision injuries that are clearly distinguishable from those suffered during the initial collision . . . or involve a wrongful death claim. 537 F.2d at 726. Conversely, Fouche v. Chrysler Motors Corp., 103 Idaho 249, 646 P.2d 1020 (Ct. App. 1982), which placed the burden of apportionment on the manufacturer, involved non-fatal injuries alleged to have been made more severe because of the product defect. Id. at 251, 646 P.2d at 1022.

The “factual distinction” is further controverted by the quadriplegia and paraplegia cases which appear on both sides of the apportionment debate. Compare Shipp v. General Motors Corp., 750 F.2d 418 (5th Cir. 1985) (burden on manufacturer) and Sumnicht v. Toyota Motor Sales, 121 Wis. 2d 338, 360 N.W.2d 2 (1984) (burden on manufacturer), with Duran v. General Motors Corp., 101 N.M. 742, 688 P.2d 779 (Ct. App. 1983) (burden on plaintiff).
THE CRASHWORTHINESS DOCTRINE

minibus was struck from behind by a car travelling between 50 and 65 miles per hour. Neither of the plaintiffs was wearing a seat belt; both were ejected from the van during the crash and suffered severe injuries. The plaintiffs alleged that their injuries were enhanced principally by a defective door latch design which caused the doors to open during the collision, resulting in their ejection from the van.

The trial court held that the plaintiffs were only required to prove that the defective door latch was a substantial factor in causing the enhancement of their injuries. Under this approach, the manufacturer had the burden of apportionment in seeking to limit its liability to the enhanced injury caused by its defective product. Volkswagen thus had the burden of segregating the injuries between those caused by the initial collision, those caused by the alleged design defect in the door latch, and those caused by the plaintiffs’ failure to use their seat belts.

The Second Circuit Court of Appeals rejected the trial court’s use of the substantial factor approach as placing “too heavy a burden on the manufacturer and contradict[ing] the theoretical underpinnings of the second collision doctrine.” The court concluded that placing the burden of apportioning between the collision injuries and the enhanced injuries on the manufacturer forces the manufacturer to show a “plethora of hypothetical and speculative possibilities.” In addition, the nature of proof under the substantial factor approach allows the jury to engage in undue speculation. The court noted that such speculation could tempt a jury to assign liability on the basis of which party would best be able to afford the damages, namely, the manufacturer. The court held that requiring the plaintiff to prove the extent of the enhanced injuries in order to recover from the manufacturer provided a “simpler, fairer, and conceptually more sound approach” to the problem.

Similarly, in Duran v. General Motors Corp., the New Mexico appellate court also relied on the theoretical basis of second collision liability to conclude that Huddell articulated the proper burden of proof. In Duran,
the plaintiff was one of a group of high school cheerleaders returning from a football game in a Chevrolet van owned by the school district. The van encountered heavy rain and the driver lost control as it hydroplaned. The van struck a grassy median and rolled over. The plaintiff, who was seated in the left rear of the van, was injured when the roof and rear door frame were pushed inward and downward into the passenger area by the impact during the rollover. The plaintiff’s head struck the door frame, or “header,” resulting in the dislocation of a cervical disc and paralysis from the chest own. 76

Noting the similarity between second collision cases and cases involving proof of aggravation of a pre-existing injury, 77 the Court adopted the sole factor approach in proving proximate cause. 78 The plaintiff did not object to the Huddell standard, but rather contended that she had met the elements of proof prescribed in Huddell. 79 Plaintiff’s expert testified that if the weldings had not failed and the roof had not buckled in such a way as to cause intrusion of the rear header into the car as a sharp object, the plaintiff, like the girl next to her, would have hit her head on the roof and sustained a neck sprain rather than a dislocation. 80

The court concluded, however, that this evidence—the only evidence presented to show enhanced injury—was insufficient to establish causation. 81 The court found two “insurmountable difficulties” with the testimony of the plaintiff’s experts. First, her experts failed to estimate how much the header would have intruded absent the alleged defects. 82 This was a crucial point to establish, stated the court, because the manufacturer could not be held liable for injuries caused by the initial impact. 83 Second, the medical expert also failed to explain how the plaintiff would have sustained the same injury as the girl with the sprained neck. The court reasoned that such a conclusion was unfounded without specific evidence of how far and in what

75. Id. at 743, 688 P.2d at 780.
76. Id. at 743-44, 688 P.2d at 780-81.
77. The Court noted that in the latter cases defendant is liable only for the aggravation or acceleration of plaintiff’s injuries—not for the pre-existing condition—and that plaintiff bears the burden of proving the extent of the aggravation with reasonable certainty. Id. at 750, 688 P.2d at 787 (citing Woods v. Brumlop, 71 N.M. 221, 377 P.2d 520 (1962); Hebenstreit v. Atchison, Topeka & Santa Fe Ry., 65 N.M. 301, 336 P.2d 1057 (1959)).
78. Id.
79. Id.
80. Id. at 752, 688 P.2d at 789.
81. Id.
82. The court stressed: “Both of plaintiff’s experts testified that as a result of the failure of the welding and the absence of the trim retainers, the rear door header intruded farther into the passenger compartment than it would have without those defects. Neither, however, could estimate how much more.” Id. at 750, 688 P.2d at 787.
83. Id. at 752, 688 P.2d at 789 (emphasis in original). “[The defendants were] only liable, if at all, for that portion of the damage or injury caused by the defects over and above the damage or injury that probably would have occurred as a result of the van impacting on its roof without those defects.” Id. (emphasis in original).
direction the header would have intruded absent the alleged defects. The court held that the trial court should have directed a verdict for the defendant, stating "the jury could have no basis other than conjecture, surmise or speculation upon which to consider whether [the plaintiff's] injury occurred as a result of the added intrusion of the rear header or as a result of the unavoidable intrusion.'"

The foregoing cases expressly adopted the Huddell standard and applied it to the plaintiff's offer of proof. Additionally, a number of other courts have embraced the Huddell standard before being presented with an opportunity to apply it to the facts of the case. Still other courts have applied a rule that is similar to the Huddell formulation.

III. PRODUCT DEFECT AS A SUBSTANTIAL FACTOR IN CAUSING PLAINTIFF'S ENHANCED INJURY

A number of courts have rejected the Huddell standard of proof of proximate cause in second collision cases as imposing too stiff a burden on

84. Id. at 752-53, 688 P.2d 789-90.
85. Id. at 753, 688 P.2d at 790. In Jeng v. Witters, the trial court also decided the issue of proximate cause based upon the Huddell analysis. 452 F. Supp. 1349, 1360-61 (M.D. Pa. 1978), aff'd without opinion, 591 F.2d 1335 (3d Cir. 1979). In that case, plaintiffs were passengers in the rear seat of a Buick sedan which was crossing a four-lane highway when it was struck by another car. Id. at 1353-54. The rear door of the vehicle "flew open" and both plaintiffs were thrown out of the car onto the highway. Id. at 1353. Plaintiffs sued the car's manufacturer, claiming that their injuries were enhanced by a defective door latch. Id. Mr. Jeng apparently suffered only "abrasions and cuts" in the accident, while Mrs. Jeng was killed. Id. at 1352-63. At trial, the jury found that the door latch was not defective; plaintiffs moved for a judgment n.o.v. and for a new trial. Id. at 1354. The court went on to review plaintiffs' "actual proof on the augmentation of injuries by reason of the allegedly defective door," and found it insufficient to establish liability. Id. Plaintiffs' engineering expert testified—and General Motors' expert admitted on cross-examination—that it is more dangerous to be ejected from a vehicle than to remain inside it during the accident. Id. at 1361-62. Plaintiffs' medical expert, however, was not able to state conclusively whether plaintiffs would have sustained the same or similar injuries if they had not been ejected from the car. Id. at 1362. Thus the court held that plaintiffs had "failed to submit adequate evidence on which a jury could decide what injuries would have resulted had the alleged alternative safer [door latch] design been used and failed to establish the extent of enhanced injuries attributable to the design defect." Id.
87. In Stonehocker v. General Motors Corp., 587 F.2d 151 (4th Cir. 1978), the plaintiff in a rollover case sued for enhanced injuries allegedly resulting from the car manufacturer's negligent design of the roof and negligent manufacture of the windshield. Id. at 153. The Fourth Circuit Court of Appeals reversed and remanded for a new trial, finding reversible error in the district court's refusal to admit the manufacturer's compliance with a subsequently enacted safety standard as evidence of due care. Id. at 156-57. Citing Huddell, the court stated that on retrial defendant would be entitled to an instruction on enhanced injury, and that "the burden is on the plaintiff either to establish that he would have suffered no injury or the extent of the injury he would have suffered, had the vehicle been properly designed." Id. at 158 (citing Huddell, 537 F.2d 726, 737-39).
88. See Curtis v. General Motors Corp., 649 F.2d 808, 813 (10th Cir. 1981) (applying Colorado law); Higginbotham v. Ford Motor Co., 540 F.2d 762, 774 (5th Cir. 1976) (applying Georgia law); Lee v. Volkswagen of Am., Inc., 688 P.2d 1283, 1287-88 (Okla. 1984); Ropiequet, supra note 31, at 21 n.19.
the plaintiff. These courts typically have rejected the Huddell formulation on the following grounds: that Huddell is at odds with the "orthodox" doctrines of joint liability of concurrent tortfeasors, and that Huddell requires the plaintiff to apportion, between the initial and second collisions, injuries that often are indivisible. Courts that follow the less rigorous "substantial factor" approach to causation in second collision cases hold that once the plaintiff has made a prima facie showing of enhancement, i.e., that the defect is a substantial factor in causing the enhanced injury, a jury question is presented and the burden shifts to the defendant. The defendant has the burden of apportioning the injuries between those resulting from the initial collision and those caused by the alleged defect in the second collision. If the injury is deemed to be indivisible, the manufacturer is held liable for the entire amount of plaintiff's harm.

The leading case for the substantial factor approach is the Tenth Circuit's decision two years after Huddell, Fox v. Ford Motor Co. The Fox Court sounded both the concurrent tortfeasor and the indivisible injury themes in its approach to proximate causation. In Fox, two couples were traveling in a 1970 Ford Thunderbird along an icy highway. All four passengers were wearing seat belts. A pickup truck traveling in the opposite direction crossed over the center line and struck the Thunderbird nearly head-on. Although both of the husbands, in the front seats, survived the accident, their wives suffered extensive abdominal injuries and fractured spines, and were killed.

The plaintiffs' experts testified that the wives' injuries were more severe than those that would have occurred had the rear seat belts been equipped with shoulder belts, not merely lap belts. The manufacturer's experts countered with conclusions that the rear seat belts were properly positioned, that the angle of the belts did not influence the extent of the injuries, and

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90. 575 F.2d 774 (10th Cir. 1978) (applying Wyoming law).
91. Id. at 777.
92. Id. at 778.
93. The complaint is that the hip belts approached being on a horizontal plane rather than on a vertical one which would hold the hips down. The result was that the entire force of the accident was absorbed by the abdomen, a part of the body which is particularly vulnerable. The theory was that if the seat belts had been placed so as to hold the hips down, there would have been preventive force exerted designed to prevent injuries to the lower body. The absence of shoulder belts subjects the upper body to the risk of injury.

Id. at 777.
that the severe injuries were attributable to the high speed of the impact.\textsuperscript{94} The trial court entered jury verdicts for the two plaintiffs' estates in the amounts of $350,000 and $300,000.\textsuperscript{95}

Relying on \textit{Huddell v. Levin}, Ford argued on appeal that the trial court erred by failing to instruct the jury that the defendant could be held liable only for that portion of damages which "proximately resulted" from the design defects.\textsuperscript{96} Ford argued that to prove proximate causation of enhanced injuries, "plaintiffs were required to prove with specificity the injuries which flowed specifically from its deficiencies."\textsuperscript{97}

The Tenth Circuit agreed in principle with Ford's argument that the plaintiffs had the burden of proving that injuries were caused by the allegedly defective design of the rear belts. The manufacturer's liability should be limited to those injuries that were the proximate result of the defect.\textsuperscript{98} The court, however, declined to follow the Third Circuit's approach to causation in \textit{Huddell}. The Fox court rejected \textit{Huddell}'s requirement that the plaintiff prove what injuries would have occurred as a result of the initial collision absent the alleged defect, stating this approach posed "an impossible question to answer."\textsuperscript{99}

The Fox court asserted that \textit{Huddell} "refused to follow the orthodox doctrine of joint liability of concurrent tortfeasors for injuries which flow from their concouring in one impact."\textsuperscript{100} The court rejected the Third Circuit's conclusion that concurrent tortfeasor principles are inapplicable in the second collision context. The court noted that, under concurrent tortfeasor principles, where two parties each contribute in causing injury and it is not reasonably possible to distinguish the amount of damage caused by the separate acts, each party can be held liable for the entire extent of the harm.\textsuperscript{101} Thus, although the initial accident in Fox was caused by the pickup

\textsuperscript{94} Id.
\textsuperscript{95} Id. at 777.
\textsuperscript{96} Id. at 786-87.
\textsuperscript{97} Id. at 787.
\textsuperscript{98} Id. (citing Larsen v. General Motors Corp., 391 F.2d 495, 503 (8th Cir. 1968); Knippen v. Ford Motor Co., 546 F.2d 993 (D.C. Cir. 1976); Polk v. Ford Motor Co., 529 F.2d 259 (8th Cir), \textit{cert. denied}, 426 U.S. 907 (1976); Turcotte v. Ford Motor Co., 494 F.2d 173 (1st Cir. 1974); Dyson v. General Motors Corp., 298 F. Supp. 1064 (E.D. Pa. 1969)).
\textsuperscript{99} 575 F.2d at 788. The court noted that "[t]he thesis of [Huddell] was that collision cases are to be treated differently from other liability or negligence cases as far as the specificity of proof is concerned." \textit{Id.}
\textsuperscript{100} Id. "We fail to see any difference between this type of case and ... other case[s] in which two parties, one passive, the other active, cooperate in the production of an injury." \textit{Id.} See also General Motors Corp. v. Edwards, 482 So.2d 1176, 1190 (Ala. 1958) "Like the Fox court, this Court sees no reason to dismantle our longstanding rules of concurrent tortfeasor liability merely because 'crashworthiness' claims do not present, as the \textit{Huddell} court called it, 'an orthodox strict liability case.'" \textit{Id.}
\textsuperscript{101} "In the average tort case involving multiple causes, each of which is a substantial factor in bringing about an injury incapable of logical division, every negligent party is charged with
truck that crossed over the center line, Ford was jointly and severally liable
as a concurrent tortfeasor for the entire amount of the harm because the
plaintiffs had shown that the design of the seats and seat belts was a
substantial factor in causing the plaintiffs' injuries. Although concurrent
tortfeasors may be able to apportion damages between themselves "if there
are distinct harms or a reasonable basis for determining the causes of
injury," the Fox court noted that apportionment is neither appropriate
nor possible where the injury suffered is not divisible. The court then held
that the injury suffered in the present case, death, was indivisible. Ac-

liability for the entire damage." Foland, supra note 5, at 609 (citing Restatement (Second)
Torts § 433A (1965), comment on subsec. 2).

Section 433A of the Restatement provides:
(1) Damages for harm are to be apportioned among two or more causes where
(a) there are distinct harms, or
(b) there is a reasonable basis for determining the contribution of each cause
to a single harm.
(2) Damages for any other harm cannot be apportioned among two or more causes.

Section 433B(2) provides:
Where the tortious conduct of two or more actors has combined to bring about
harm to the plaintiff, and one or more of the actors seeks to limit his liability on
the ground that the harm is capable of apportionment among them, the burden of
proof as to the apportionment is upon each such actor.

The indivisibility of an injury resulting in the imposition of joint or concurrent tortfeasor
liability has been described as follows:

[The identity of a cause of action against each of two or more defendants; the
existence of a common, or like, duty; whether the same evidence will support an
action against each; the single indivisible nature of the injury to the plaintiffs;
identity of the facts at the time, place or result; whether the injury is direct and
immediate, rather than consequential; responsibility of the defendants for the same
injury, as distinguished from the same damnum.


For more extensive discussion of joint or concurrent tortfeasor liability and its application
to second collision cases, see Ball, A Reexamination of Joint And Several Liability Under A
Comparative Negligence System, 18 St. Mary's L.J. 891, 898 (1987); Ghiardi, supra note 1,
at 4-5; Wade, Multiple Tortfeasor Liability in Products Liability Suits, 55 Miss. L.J. 683 (1985);
Comment, Apportionment of Damages in the "Second Collision" Case, 63 Va. L. Rev. 475,

102. Fox, 575 F.2d at 787.

103. Id. (citing Restatement (Second) of Torts § 423A). See, e.g., Mitchell v. Volkswagenwerk
A.G., 669 F.2d 1199, 1206 (8th Cir. 1982) ("Under established tort principles even though two
or more tortfeasors act consecutively but independently, they still may be only severally liable
if it can be shown that there exists a clearly separable harm so that a reasonable division of
damage can be made.").

104. 575 F.2d at 787. See General Motors Corp. v. Edwards, 482 So. 2d 1176, 1189 (Ala.
1985) ("Fox, following the dictates of the Restatement (Second) of Torts §§ 433, 433A and
433B (1965), holds that if plaintiff's injuries are indivisible, the manufacturer and striking
driver are jointly and severally liable as concurrent tortfeasors.") (citations omitted).

105. "Death is a different matter. It is not a divisible injury in which apportionment is either appropriate or possible." Id. (citing Restatement (Second) of Torts § 433A, comment i;
W. PROSSER, HANDBOOK OF THE LAW OF TORTS 315 (4th ed. 1971)). Dean Prosser stated that
Accordingly, the court concluded that, as a matter of law, there was no basis on which Ford could apportion plaintiffs' injuries between those resulting from the initial and second collisions, and thus limit its liability.

In short, under the approach taken in Fox, if the plaintiff can make a prima facie showing that a defect in the manufacturer's product was a substantial factor in causing plaintiff's injury, the manufacturer acquires the status of a concurrent tortfeasor. The burden then shifts to the manufacturer to attempt to limit its liability by proving an apportionment of plaintiff's injuries between those caused by the initial collision and those caused in the second collision by the product defect. Where the injury suffered is indivisible, as in the case of death, paralysis, or any other singular harm, apportionment is deemed impossible and the manufacturer is liable for the entire extent of plaintiff's injuries.106

The court in Mitchell v. Volkswagenwerk, A.G.,107 which equated the Huddell rule with "proving the impossible,"108 followed closely the Tenth Circuit's approach in Fox:

[T]he plaintiffs' burden of proof should be deemed satisfied against the manufacturer if it is shown that the design defect was a substantial factor in producing damages over and above those which were probably caused as a result of the original impact or collision. Furthermore, the extent of the manufacturer's liability depends upon whether or not the injuries involved are divisible such that the injuries can be clearly separated and attributed either to the manufacturer or the original tortfeasor. If the manufacturer's [defective design] is found to be a substantial factor in causing an indivisible injury such as paraplegia, death, etc., then absent a reasonable basis to determine which wrongdoer actually caused the harm, the defendants should be treated as joint and several tortfeasors.109

Other courts that have rejected the Huddell approach to proximate causation in second collision cases similarly have adopted the concurrent tortfeasor

"[c]ertain results, by their very nature, are obviously incapable of any logical, reasonable or practical division. Death is such a result, and so is a broken leg or any single wound, the destruction of a house by fire, or the sinking of a barge." W. PROSSER, supra § 52, at 315 (footnotes omitted).

106. See generally Fouche v. Chrysler Motors Corp., 103 Idaho 249, 646 P.2d 1020, 1023-25 (Ct. App. 1982). Fouche presents a general discussion of this approach to Restatement sections 433A and 433B in the second collision context. The court in Fouche held that the concurrent tortfeasor doctrine is applicable even in cases where there are not multiple tortfeasors, as where plaintiff has not sued party who caused the initial collision. Id. at 253, 646 P.2d at 1023. Presumably the court in Fouche would follow this approach even where plaintiff himself was responsible for the initial collision. Id. at 253-54, 646 P.2d at 1025.107

107. 669 F.2d 1192 (8th Cir. 1982).

108. Id. at 1203. See also Products Liability: "Crashworthiness" Doctrine, 29 A.T.L.A. L. Rep. 13, 14 (1986) (after analyzing both approaches, author asserts that the burden of proof under Huddell would "shipwreck a lawsuit").109

109. 669 F.2d at 1206 (citing Mathews v. Mills, 288 Minn. 16, 178 N.W.2d 841 (1970)).
approach to liability and indivisible injuries as articulated by the courts in Fox and Mitchell. 110

IV. RESOLVING THE CONFLICT IN AUTHORITY: WHY HUDDELL IS THE BETTER REASONED APPROACH

The preceding sections have described the two competing views of a plaintiff's burden in proving causation between a product defect and an enhanced injury in second collision or crashworthiness cases. Although both lines of authority agree that the manufacturer in a second collision case may be held liable only for the enhancement of injury caused by his product, there exists profound disagreement over the degree of proof that the plaintiff is required to demonstrate. One view, initially articulated by the Third Circuit in Huddell v. Levin, requires that the plaintiff offer proof of which injuries would have resulted absent the alleged defect in order to establish enhancement. Thus, the plaintiff is required to prove that the alleged defect is the sole cause of his enhanced injury. The opposing view, as articulated by the Tenth Circuit in Fox v. Ford Motor Co., requires only that the plaintiff make a prima facie showing that the alleged defect was a substantial factor in causing the enhanced injury. If the plaintiff makes this showing, the burden then shifts to the defendant, now treated as a concurrent tortfeasor,

110. See Richardson v. Volkswagenwerk, A.G., 552 F. Supp. 73 (W.D. Mo. 1982): [A] plaintiff's burden of proof in a second collision—strict liability case should be deemed satisfied against the manufacturer if it is shown that the defective product was a substantial factor, rather than the sole factor in producing damages over and above those which were probably caused as a result of the original collision. . . . If the manufacturer's conduct is found to be a substantial factor in causing an indivisible injury such as paraplegia, quadriplegia, death, etc., then absent a rational basis to determine which wrongdoer actually caused the harm, the defendants are jointly and severally liable for plaintiff's total injuries. Id. at 83. See also Shipp v. General Motors Corp., 750 F.2d 418, 425-26 (5th Cir. 1985) (Texas courts hold that defect need only be "a 'producing cause' of injury" and adhere to "the tenets of concurrent causation"); thus, "[b]ecause the defect in a crashworthiness case is viewed as commingling with other forces to produce a plaintiff's injuries, the entire injury alternatively could be attributed solely to the defect as a concurrent cause"); General Motors Corp. v. Edwards, 482 So.2d 1176, 1190 (Ala. 1985) ("[W]here an accident results in an indivisible injury, such as death, an automobile manufacturer cannot attempt to limit its liability for proving, or requiring the plaintiff to prove, what portion of plaintiff's injuries is attributable to the defectiveness of the vehicle it manufactured and what portion is attributable to the striking driver.").

to apportion the injuries between those resulting from the initial collision and the enhanced injuries attributable to the product defect.¹¹¹

This section will attempt to resolve this conflict in authority by examining these divergent approaches in view of the theoretical underpinnings of the second collision doctrine, as well as the broader themes of tort liability generally and strict product liability in particular. Such an examination reveals that the Huddell sole factor approach provides the better reasoned analysis for the following reasons: (1) the Huddell approach is more consistent with the Larsen doctrine of second collision or crashworthiness liability because it requires the plaintiffs to prove the existence of an enhanced injury; (2) this approach is consistent with the broader themes of strict product liability, i.e., that a manufacturer is not required to design a crash-proof vehicle, nor to stand as an absolute insurer of its product; (3) the doctrine of apportionment among concurrent tortfeasors—at the heart of the less rigorous, substantial factor approach—is doctrinally inapposite as applied to second collision cases; and (4) the related concept of indivisible injury is similarly inappropriate, because the very nature of the relief sought—liability for injury enhancement—contemplates divisibility of the plaintiff’s harm.

A. The Huddell Approach is Consistent with the Underlying Doctrine of Second Collision or Crashworthiness Liability

As discussed above, the second collision or crashworthiness doctrine allows an injured plaintiff to hold a manufacturer liable for a product defect which did not cause the plaintiff’s accident, but which enhanced or aggravated the plaintiff’s injuries.¹¹² There are two fundamental corollaries of the second collision doctrine. First, because the allegedly defective product played no role in causing plaintiff’s initial accident, the manufacturer can be held liable only for enhanced or aggravated injuries that would not have occurred as a result of the initial collision absent the alleged defect. Second, the plaintiff bears the burden of proving causation between the alleged defect and the enhanced injury.¹¹³ The Huddell standard of proximate causation is the logical extension of these two corollaries.

¹¹¹. At least one court has expressed its dissatisfaction with both lines of authority. General Motors Corp. v. Edwards, 482 So. 2d 1176 (Ala. 1985). The court in Edwards found that “while both the Huddell and Fox lines of cases have their merits, both also have serious shortcomings.” Id. at 1188. The court applauded Huddell for recognizing, “as the Fox court did not, that proof of defectiveness also requires proof that a ‘safer’ practical, alternative design was available to the manufacturer.” Id. at 1189. The court in Edwards, however, rejected Huddell’s requirement that the plaintiff “prove precisely which of his injuries were caused by the striking driver and which were caused by the defective design of the defendant manufacturer’s automobile,” on the theory that “where two or more tortfeasors act to produce a single indivisible injury such as death, apportionment is not allowed between the tortfeasors.” Id. (citations omitted).

¹¹². See supra notes 1-6 and accompanying text.

¹¹³. See supra note 34 and accompanying text.
The Huddell approach requires the plaintiff to prove that the alleged defect is the sole cause of his enhanced injury. To do so, the plaintiff must offer proof of what injuries would have occurred as a result of the initial collision in the absence of the alleged defect. The substantial factor approach does not require proof of what plaintiff's injuries would have been absent the alleged defect. Without such proof, however, there is no basis for determining that an enhanced injury even exists. In this respect, it is crucial to recognize that in second collision cases proof of causation and proof of enhancement are one and the same. Because the product defect played no role in causing the initial accident, it is only through proving the existence of an enhanced injury that the plaintiff can establish a causal relationship between his harm and the manufacturer's product.

The substantial factor approach allows the plaintiff to proceed without proof of which injuries were the inevitable result of the initial collision. As a result, this approach allows the plaintiff to hold the manufacturer liable without actually establishing that any enhancement of injury occurred; it allows the plaintiff to hold the manufacturer liable for injuries which in fact were caused by the initial collision.

This result is directly at odds with the fundamental doctrine of second collision liability. As the court in Larsen stated:

Any . . . defect not causing the accident would not subject the manufacturer to liability for the entire damage, but the manufacturer should be liable for that portion of the damage or injury caused by the defective design over and above the damage or injury that probably would have occurred as a result of the impact or collision absent the defective design.

The Huddell formulation achieves this result by requiring specific proof of enhancement. The substantial factor approach to proximate causation,

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114. See supra notes 45-48 and accompanying text.
115. See supra note 99 and accompanying text.
116. "[P]roof of causation and proof of enhanced injury are inseparable—the injury must be capable of apportionment or proof of separate proximate cause must fail, and proof of proximate cause requires definition of the injury." Foland, supra note 5, at 612.
117. See Comment, supra note 101, at 489:
In the second collision case, the basis of the manufacturer's liability is wholly distinct from that of the . . . other defendants. Because the manufacturer theoretically is liable only because he caused or aggravated the plaintiff's injuries, tort principles suggest that the plaintiff must supply a rational basis for calculating those specific damages.
118. See supra notes 104-06, 110 and accompanying text.
119. Accord, Ghiardi, supra note 1, at 9 (under Larsen, a manufacturer "is to be held liable only for those damages resulting from the defective design"); Note, Litigating Enhanced Injury Cases, supra note 3, at 1259-60 (courts that allow recovery for entire amount when injury is deemed indivisible have essentially abandoned the original Larsen premise, as opposed to courts which have "steadfastly honored the parameters of recovery as delineated in—Larsen").
120. 391 F.2d at 503.
121. Thus, the Huddell formulation imposes neither a rigorous addition to normal proof burdens nor a mechanical approach to proof at trial. On the contrary, the
which does not require plaintiff to prove which injuries would have been sustained absent the defect, subjects the manufacturer to liability for the plaintiff's entire harm, including injuries solely the result of the initial collision in which its product played no part.122

B. The Huddell Approach is More Consistent with the Broader Themes of Strict Product Liability

The opposing views of proximate causation in the second collision context reflect a fundamental tension within the developing law of strict product liability. On one hand, the history of product liability generally has been one of expansion. From “the fall of the citadel” of privity123 and the early opinions of Justice Traynor124 to the present, the law has steadily eroded the requirements of proof postulated by the Huddell court merely describe in logical terms the practical showing that must be made in any design case scaled down proportionally to fit the peculiar nature of this liability.

Hoenig, supra note 1, at 692-93 n.256.

122. Requiring plaintiff to prove with reasonable certainty the extent of injury enhancement attributable to the product defect also is consistent with the approach taken in ordinary tort cases in which plaintiff claims aggravation of a pre-existing injury. Duran v. General Motors Corp., 101 N.M. 742, 688 P.2d 779, 787 (Ct. App. 1983). The court in Duran noted that defendant in such cases is liable only for the injuries it inflicted on the injured party, and is not responsible for plaintiff's pre-existing condition. Id. The defendant "is liable only for the aggravation or acceleration [of plaintiff's injury] and the burden of proving with reasonable certainty the extent of the aggravation [is] on the plaintiff." Id. (quoting Hebenstreit v. Atchison, Topeka & Santa Fe Ry Co., 65 N.M. 301, 306, 336 P.2d 1057, 1061 (1959)).

123. Prosser, The Fall of the Citadel (Strict Liability to the Consumer), 50 MINN. L. REV. 791 (1966). Prosser explains that "the date of the fall of the citadel of privity can be fixed with some certainty. It was May 9, 1960, when the Supreme Court of New Jersey announced the decision in Henningson v. Bloomfield Motors, Inc. [32 N.J. 358, 161 A.2d 69 (1960)]." Id. In this case, the court held that privity was immaterial to recovery from a manufacturer of a defective product, and recognized an implied warranty of merchantability. Id. at 793. What has followed has been "the most rapid and altogether spectacular overturn of an established rule in the entire history of the law of torts. Id. at 793-94.

One commentator noted three major reasons for the shift from liability based on contractual relations to that of strict liability:

(1) the costs and consequences arising from damaged products could and should best be borne by the businessmen who make and sell these products because they have the ability to distribute their losses by price increases or by insurance;

(2) accident prevention could better be promoted by the adoption of strict liability theories in tort, dropping the necessity of proving negligence; and

(3) the difficult problems of proof in negligence actions, with the attendant cost of prolonged litigation, would be eliminated.


124. See, e.g., Greenman v. Yuba Power Products, Inc., 59 Cal. 2d 57, 377 P.2d 897, 27 Cal. Rptr. 697 (1962) (abandoning requirement of contractual warranties as precedent to recovery against manufacturer); Escola v. Coca-Cola Bottling Co., 24 Cal. 2d 453, 150 P.2d 436 (1944) (Traynor, J., concurring) (arguing that "a manufacturer's negligence should no longer be singled out as the basis of a plaintiff's right to recover").
obstacles to an injured plaintiff's recovery. On the other hand, courts and commentators throughout have been unanimous in stating that strict liability is not the equivalent, in function or in theory, of absolute liability, and that the manufacturer must not be held to stand as an insurer of his product.

Proponents of the substantial factor approach mistakenly argue that this standard is consistent with strict liability in the broader context because it eases the injured plaintiff's burden of proof. However, this argument misperceives the underlying purpose of strict liability. The development of strict liability in tort meant the development of liability without fault. Strict liability principles in the product area allowed a plaintiff to proceed against a manufacturer for injuries resulting from an unreasonably dangerous product without requiring the plaintiff to prove negligence on the part of the manufacturer. These principles eased the plaintiff's burden of proof by

125. See, e.g., Huff v. White Motor Corp., 565 F.2d 104, 109 (7th Cir. 1977) ("The discernible trend in products liability law has been to increase the duty owed by manufacturers for injuries caused by their products."). The development of the crashworthiness doctrine is an example of this trend.

The "crashworthiness doctrine," which is also referred to as the "second collision doctrine" or the "enhanced injury doctrine," is a recent development in the area of products liability law, so recent, in fact, that prior to 1968 a case of this nature would likely have been subject to dismissal for failure to state a claim upon which relief could be granted. General Motors Corp. v. Edwards, 482 So. 2d 1176, 1181 ( Ala. 1985).

126. E.g., Larsen v. General Motors Corp., 391 F.2d 495, 502 (8th Cir. 1968) (although automobile manufacturer must use "reasonable care" in designing its car, there is "no duty to design an accident proof or fool-proof vehicle"); Dyson v. General Motors Corp., 298 F. Supp. 1064, 1073 (E.D. Pa. 1969) (no duty to manufacturer "crash proof" automobile); Baumgardner v. American Motors Corp., 83 Wash. 751, 756, 522 P.2d 829, 832 (1974) (en banc) (defines duty of automobile manufacturers after analysis of the Evans and Larson progeny). "Strict liability is not an absolute liability test. While strict liability has its historical origins in absolute liability for ultra hazardous activity and implied warranty cases, it has evolved in modern times within the limits of classic formulation of the rule in the Restatement of Torts. This is a dual test, which requires the plaintiff to prove both that the defendant manufactured or sold a defective product and that the product was unreasonably dangerous." Kindregan & Swartz, The Assault On The Captive Consumer: Emasculating The Common Law Of Torts In The Name Of Reform, 18 St. Mary's L.J. 673, 706-07 (1987).

127. In Lahocki v. Contee Sand & Gravel Co., Inc., 41 Md. App. 501, 398 A.2d 490 ( Ct. Spec. App. 1979), the court characterizes the Huddell approach as prescribing plaintiff's burden of proving "damages" once liability has been established. Id. at 579, 398 A.2d at 500.

To require the plaintiff, in this manufacturing defect case, to prove how, and how much, he would have been injured "but for" the defect in the manufacturer's product, simply denies the application of strict liability to such cases. The very purpose of strict liability is to ease an injured party's burden of proof where it was heretofore foreclosingly difficult.

Id. Quite to the contrary, the Huddell formulation articulates plaintiff's burden of proving injury enhancement or proximate causation, which is a prerequisite to liability. Huddell, 537 F.2d at 737-38.

128. As one commentator notes:

Prior to the adoption of section 402A, persons suing in tort for product-related injuries usually had to prove that the manufacturer or seller was negligent. One of
shifting the focus of inquiry to the dangerousness of the product, and away from the conduct of the manufacturer.\textsuperscript{129}

In asserting this theme of easing the plaintiff's burden of proof, proponents of the substantial factor approach lose sight of an equally important and well-accepted theme in strict liability: that of requiring the plaintiff to prove a causal relationship between the product defect and the harm suffered.\textsuperscript{130} Liability without fault never was intended to be construed as liability without causation. Even absolute liability would not go this far.\textsuperscript{131} The plaintiff must

\begin{itemize}
  \item the primary reasons for the adoption of section 402A was the perceived need to relieve plaintiffs of some of the burdens of proving negligence.
  \item The essence of the strict liability conception is that liability may be imposed upon the manufacturer without the necessity of proving negligence. A claimant need only demonstrate that at the time it was sold the product was defective, and that the defect caused injury. Those elements established, the care or lack of care of the manufacturer is simply irrelevant.
  \item \textit{Huddell v. Levin}, 537 F.2d 726, 734 (3d Cir. 1976).
  \item The closest theory to absolute liability that the common law has known was provided by the writ known as trespass \textit{vi et armis} (with force and arms), which originated in the 13th century. In trespass, any action taken that caused direct and immediate harm gave rise to liability on the part of the actor. Moreover, unlike a modern products liability claim which requires that the product be unreasonably dangerous for liability to attach, liability in trespass was imposed regardless of the actor's culpability. \textit{See, e.g., Leame v. Bray}, 3 East 593, 102 E.R. 724 (K.B. 1803). Justice Grose, in what has become an oft quoted passage, stated as follows:
  \begin{quote}
    Looking into all the cases from the Year Book in the [21st year of the reign of Henry VII] down to the latest decision on the subject, I find the principle to be, that if the injury be done by the act of the party himself at the time, or he be the immediate cause of it, though it happen accidentally or by misfortune, yet he is answerable in trespass.
  \end{quote}
  \textit{Id.} at 600, 102 E.R. at 727 (opinion of Grose, J.). The nature of liability in trespass was further clarified by Lord Ellenborough in the same case: "If the injurious act be the immediate result of the force originally applied by the defendant, and the plaintiff be injured by it, it is the subject of an action in trespass \textit{vi et armis} by all the cases ancient and modern." \textit{Id.} at 599, 102 E.R. at 726.
  \item The above passages, however, further demonstrate that, while the writ of trespass generally meant that a man acted at his own peril, causation remained a necessary element in establishing a prima facie case, albeit the only element. \textit{Cf. O.W. Holmes, The Common Law} 85 (1881) (summarizing traditional trespass doctrine as articulated in the late 18th and early 19th century precedents and concluding that "it [was] perfectly settled at common law that 'Not guilty' only denied the act.").
  \item More importantly, causation was not only required in trespass, it was less easily satisfied than in other writs which were at least partly based on fault. This derived from the fact that trespass required that the injury be direct and immediate; if it was not direct, trespass would not lie. If the injuries were indirect, \textit{i.e.}, consequential, a plaintiff could bring an action on
\end{itemize}
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still prove causation even where he no longer needs to prove culpability.

The Huddell standard is consistent with the doctrinal foundations of strict liability in tort for manufacturers of defective products. On the one hand, it allows a plaintiff to recover fully for second collision injuries resulting from a product defect, even where the product played no role in causing the initial injury. Yet it also requires the plaintiff to establish causation between the claimed product defect and the enhanced injury the plaintiff has alleged. This causation is established when the plaintiff proves the existence of an enhanced injury, which plaintiff can accomplish only by introducing evidence of what the initial collision injuries would have been absent the defect.¹³²

The substantial factor approach, which does not require proof of what plaintiff’s injuries would have been absent the defect, does not require actual proof of injury enhancement. Because enhancement is the equivalent of causation in second collision cases,¹³³ the plaintiff under a substantial factor approach is relieved of the burden of proving a causal relationship between a product defect and the injury incurred. By effectively removing the element of causation from plaintiff’s case, the substantial factor approach leads to the imposition of absolute, rather than strict, liability. Contrary to the established tenets of strict liability,¹³⁴ the manufacturer is required to stand as an insurer of its product.¹³⁵

One wholly inappropriate consequence of holding the manufacturer as an insurer of its product is the complete removal of the plaintiff’s conduct from

¹³² See supra notes 45-48 and accompanying text.
¹³³ See supra note 116 and accompanying text.
¹³⁴ E.g., Larsen v. General Motors Corp., 391 F.2d 495, 501 (8th Cir. 1968) (“the manufacturer has a duty to use reasonable care under the circumstances in the design of a product but is not an insurer that his product is incapable of producing injury”).
¹³⁵ See generally Caiazzo v. Volkswagenwerk, A.G., 647 F.2d 241, 247 (2d Cir. 1981) (“Larsen did not hold, however, that manufacturers are under a duty to design ‘accident proof or fool-proof’ automobiles, nor did it hold that manufacturers are insurers.”) (citations omitted); Melia v. Ford Motor Co., 534 F.2d 795 (8th Cir. 1976) (Bright, J., dissenting) (“Manufacturers are not required to produce automobiles with the ‘strength and crash-damage resistance features of an M-2 army tank.’”); Larsen v. General Motors Corp., 391 F.2d 495, 502 (8th Cir. 1968) (manufacturer’s duty is “to use reasonable care in the design of its vehicle to avoid subjecting the user to an unreasonable risk of injury in the event of a collision”); Roberts v. May, 41 Colo. App. 82, 583 P.2d 305, 308 (1978) (“The critical question is whether, under all of the surrounding circumstances, a manufacturer has created an unreasonable risk of increasing the harm in the event of the statistically inevitable collision.”); Wernimont v. International Harvester Corp., 309 N.W.2d 137, 142 (Iowa Ct. App. 1981) (“A manufacturer cannot design against all potential dangers of collision and is only required to take reasonable steps, within the limitations of cost, technology, and marketability, to design and produce a product that will minimize the unavoidable dangers.”); Hoenig, supra note 1, at 653 n.70 (collecting cases).
the liability equation. Although strict liability largely removed the defendant's
down from consideration—focusing on the qualities of the product itself,
rather than the quality of the manufacturer's behavior—it did not similarly
eradicate consideration of plaintiff's conduct. The substantial factor ap-
proach often allows the plaintiff to avoid the consequences of his own
conduct. Particularly in single-vehicle accidents—as where a plaintiff, by
falling asleep or cornering too fast, causes his vehicle to leave the highway—
the substantial factor approach allows a negligent plaintiff who caused his
own accident to sue under the second collision doctrine for enhanced injuries
and yet collect for all his injuries, including those properly attributable to
the initial collision.

C. The Doctrine of Apportionment Among Concurrent Tortfeasors is
Theoretically Inappropriate in Second Collision Cases

Courts rejecting the Huddell approach in favor of the substantial factor
standard have based their conclusions on principles of injury apportionment
among concurrent tortfeasors and the indivisible nature of death, paralysis,
and other types of injury. Under this approach, if the plaintiff can make
a prima facie showing that a defect in the manufacturer's product was a
substantial factor in causing plaintiff's injury, the manufacturer is deemed
a concurrent tortfeasor along with the party who caused the initial collision.
The burden then shifts to the manufacturer to attempt to limit its liability
by proving the proper apportionment of plaintiff's injuries between those
attributable to the initial collision and those caused in the second collision
by the product defect. Where the plaintiff's injury is indivisible, apportion-

136. See Epstein, Products Liability: Defenses Based On Plaintiff's Conduct, 1968 UTAH L.
Rev. 267; Noel, Defective Products: Abnormal Use, Contributory Negligence and Assumption
of the Risk, 25 VAND. L. REV. 93 (1972); Twerski, The Use and Abuse of Comparative
Negligence In Products Liability, 10 IND. L. REV. 797 (1977); Vargo, The Defenses To Strict
Liability In Tort: A New Vocabulary With An Old Meaning, 29 MERCER L. REV. 447 (1978);
Walkowiak, Reconsidering Plaintiff's Fault In Product Liability Litigation: The Proposed

137. One commentator has noted that one situation "in which a plaintiff might elect to
undertake the vigorous task of proving a crashworthy-second collision case . . . arises when
. . . the injured party is contributorily negligent so that recovery is precluded as a matter of
law." Foland, supra note 5, at 602. In this situation, the second collision doctrine "provide[s] legal
redress for otherwise incompensable injuries." Id.

plaintiff should be required to prove the extent of the enhanced injuries attributable to the
defective design, particularly in a case such as this, where the wearing of seat belts would have
eliminated most, if not all, of the enhanced injuries resulting from the design defect."); Hoenig,
supra note 1, at 696 n.275 (evidence of plaintiff's failure to wear seat belt is admissible with
respect to "the availability of compensating safety devices and the nondefectiveness of the
vehicle as an integrated whole . . . mitigation of second collision injuries, . . . misuse and
assumption of risk . . . and proximate cause").

139. See supra notes 99-110 and accompanying text.
ment is deemed impossible and the manufacturer is held jointly liable for the entire extent of plaintiff's harm.\textsuperscript{140}

Given the theoretical underpinnings of crashworthiness liability, however, the doctrine of apportionment among concurrent tortfeasors is inappropriate in second collision cases. Placing the burden of apportionment on the defendant manufacturer as a concurrent tortfeasor mistakenly assumes that the defendant in fact is a tortfeasor. In this respect, proponents of the concurrent tortfeasor approach overlook the doctrinal basis for holding a manufacturer liable in a second collision context. The manufacturer, whose product played no part in causing the initial accident, is by definition liable only for injury enhancement, \textit{i.e.}, injuries over and above those that the plaintiff would have suffered in the collision absent the defect.\textsuperscript{141} Thus, the defendant manufacturer in a second collision case is not a tortfeasor at all unless the plaintiff has proved some enhancement of injuries.\textsuperscript{142} Put another way, there is no basis for applying tortfeasor status to the manufacturer in a second collision case unless the plaintiff is able to show the extent of his enhanced injuries which are attributable to the defect.\textsuperscript{143} It is universally agreed that the manufacturer in a second collision case has no liability—no status as a tortfeasor, concurrent or otherwise—unless the plaintiff has proved the existence of an enhanced injury and a causal relationship between that injury and the alleged product defect.\textsuperscript{144}

\textsuperscript{140} One court has concluded, "In the final analysis, it is over this single issue, the apportionability of normally unapportionable injuries, that the \textit{Huddell} line of cases and the \textit{Fox} line of cases differ." General Motors Corp. v. Edwards, 482 So. 2d 1176, 1189 (Ala. 1985) (citations omitted).

\textsuperscript{141} See Higginbotham v. Ford Motor Co., 540 F.2d 762, 774 (5th Cir. 1976) ("[T]he fact that [the manufacturer] is liable only for the injuries over and above those that would have occurred in a crashworthy car convinces us that a rational basis for apportionment exists."); Duran v. General Motors Corp., 101 N.M. 742, 688 P.2d 779, 787 (Ct. App. 1983) ("Because crashworthiness liability is based only on enhanced or additional injuries, the concurrent tortfeasor concept is not applicable."); Hoenig, supra note 1, at 700-01 n.292 ("Evidence of enhancement remains the key inquiry and has nothing to do with apportionment or divisibility of the injury.").

\textsuperscript{142} The Restatement approach to apportionment among concurrent tortfeasors "requires a defendant to go forward with proof of apportionment because he is the one who seeks to relieve himself of liability for all or a portion of the damages. However, in a second collision-crashworthy case, the defendant has no liability absent proof of enhanced injury. Therefore the plaintiff is the one who relies on proof of apportionment to establish his cause of action." Foland, supra note 5, at 615.

\textsuperscript{143} Wernimont v. International Harvester Corp., 309 N.W.2d 137, 142 n.3 (Iowa Ct. App. 1981). As one commentator argues, "[t]he manufacturer cannot justly be held responsible for the injuries the plaintiff sustained if the same or greater harm would have resulted without the alleged defect or with an alternative design." Note, \textit{Litigating Enhanced Injury Cases}, supra note 3, at 1268.

\textsuperscript{144} See supra note 33 and accompanying text. [T]he defendant's legal interest in proving that the actual design did not enhance injuries only becomes manifest after the claimant cogently shows the extent of injury reduction attributable to his proposed design.

Hoenig, supra note 1, at 706.
Courts and commentators who would place the burden of injury apportionment on the defendant manufacturer in a second collision case have put the cart before the horse. There is no basis for requiring the manufacturer to attempt to limit his liability via apportionment unless the manufacturer is a concurrent tortfeasor. However, the manufacturer cannot have been proven a tortfeasor unless the plaintiff has first accomplished that same apportionment in proving the existence of an enhanced or aggravated injury attributable to a product defect.  

D. "Indivisible" Injury and the Conceptual Framework of Aggravated Harm

Applying concurrent tortfeasor principles to a second collision case places the burden of apportioning plaintiff's harm between first and second collision injuries on the manufacturer. Courts that have accepted the concurrent tortfeasor analysis as appropriate in crashworthiness cases also conclude that this apportionment is not possible where plaintiff's injuries are "indivisible" in nature. As a result, the defendant manufacturer is held jointly liable for the entire amount of plaintiff's harm in those cases.

Although the manufacturer's product in a second collision case, by definition, has not caused the initial collision, under the substantial factor approach the manufacturer is held liable not only for second collision injuries, but for injuries properly attributable to the first collision as well. Such a result is thus flatly inconsistent with the underlying theory of crashworthiness or second collision liability.

The very essence of the second collision or crashworthiness doctrine is injury enhancement or aggravation—a separate injury or degree of injury over and above that which plaintiff would have suffered as a result of the initial collision absent the defect. Prior to the development of the second collision doctrine in Larsen and its progeny, an injured plaintiff had no recourse against the manufacturer whose product had not caused the initial accident because courts took the position that accidents were not an intended use of the manufacturer's product. Recognizing that this view of "intended use" was too narrow, courts recognized that manufacturers had a duty to

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145. This conclusion "is entirely consistent with the Larsen rationale. The essential proof in any second collision—crashworthy case is that the defective design directly or proximately caused or exacerbated the injuries beyond what would have been sustained absent the defective design. The nature of the relief sought contemplates apportionment, and plaintiff must offer that affirmative evidence. Without [that] affirmative proof the cause [against the manufacturer] is subject to dismissal as a matter of law." Foland, supra note 5, at 615-16.

146. See supra note 105 and accompanying text. For a particularly strong statement of this view, see Lee v. Volkswagen of Am., Inc., 688 P.2d 1283, 1288-89 (Okla. 1984).

147. Hoenig, supra note 1, at 703. As Hoenig asserts, "[a]rguments in favor of imposing the enhancement burden of proof upon the manufacturer rely upon conceptually flawed notions of dividing up indivisible injuries...." Id.

148. See supra notes 1-6 and accompanying text.
make their products reasonably safe in the event of foreseeable accidents, *i.e.*, crashworthy, and allowed plaintiffs to pursue a cause of action against the manufacturer for the enhancement of plaintiff's injuries that resulted from crashworthiness defects.  

Thus, the very nature of the relief sought by the plaintiff demands apportionment or divisibility of the injury sustained. The apportionment that is contemplated is not a division among the injuries that the plaintiff sustained, but rather the difference between the injuries actually incurred and the injuries that would have resulted in the collision in the absence of the alleged defect. Where the product defect has not caused the initial collision, the plaintiff has no cause of action at all against the manufacturer unless the plaintiff can identify a particular aspect of his injury that would not have occurred in the ordinary course of the collision absent a specific defect in the manufacturer's product. Under the theory of the crashworthiness doctrine, a plaintiff cannot establish the causation element of his case against the manufacturer absent proof of actual enhancement or aggravation.

Thus, the plaintiff in a second collision case cannot establish liability on the part of the defendant manufacturer *unless* the injury is divisible or capable of apportionment between first and second collision causes. Therefore, it is both illogical and unfair to allow the plaintiff to argue that his injury is capable of apportionment to establish liability against the manufacturer for enhanced injuries, and then argue that the manufacturer should be held jointly liable for plaintiff's entire harm because the injury, by its nature, is indivisible.

V. Conclusion

The doctrine of crashworthiness or second collision liability is now firmly embedded in the law of product liability. It extends a product manufacturer's

149. See *supra* notes 23-30 and accompanying text.
150. Hoenig, *supra* note 1, at 704 n.310. "Since the essence of the claim against the manufacturer is only the injury over and above what would have occurred with a non defective design, enhancement is not ascertained by appointment of actual injuries but by evidence of what would otherwise have occurred." *Id.*
151. See *supra* notes 119 and accompanying text.
152. In the average tort case involving multiple causes, each of which is a substantial factor in bringing about an injury incapable of logical division, every negligent party is charged with liability for the entire damage. In a second collision-crashworthy case, however, such a result has no basis in fact or theory: the manufacturer neither caused nor contributed to cause the collision and should not, therefore, be liable for any more than the *enhanced* injury. Foland, *supra* note 5, at 609 (footnote omitted) (emphasis added).
153. See, *e.g.*, Huddell, 537 F.2d at 739:
It was plaintiff, not G.M., who introduced divisibility into the litigation by arguing that the accident was survivable but for the defect in the design of the head restraint. Plaintiff cannot have the argument both ways. Plaintiff may not argue that the ultimate fact of death is divisible for purposes of establishing G.M.'s liability and then assert that it is indivisible in order to deny to G.M. the opportunity of limiting damages.
liability to situations in which a product defect caused harm, even if the product was not the originating cause of the plaintiff's accident. Although the conflict among the Huddell and Fox lines of authority persists as to the appropriate burden of proof of second collision injuries, the Huddell sole factor approach must ultimately prevail as the more logical extension of the crashworthiness doctrine. It is an approach that embodies the two fundamental corollaries of crashworthiness liability: that the manufacturer, whose product played no role in causing the initial accident, can be held liable only for plaintiff's enhanced injuries, and not for injuries attributable to the initial collision; and that the plaintiff bears the burden of proving proximate causation between product defect and injury enhancement. The substantial factor approach, lost in the conceptually inapposite principles of apportionment among concurrent tortfeasors and of indivisible harm, loses sight of these two fundamental parameters. The result is liability on the part of the manufacturer that is no longer strict, but rather absolute.