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Can Absolute Manufacturer Liability be Defended?

George L. Priest†

Professor George L. Priest’s writings have asserted over the years that expanded products liability law forces manufacturers to sell insurance contracts in conjunction with goods and services, making consumer purchases more expensive than they are worth and reducing consumer welfare. In the last volume of this Journal, Steven P. Croley and Jon D. Hanson critically analyzed Professor Priest’s work of recent years and argued that the expansion of tort liability has benefited consumers even where it has forced the withdrawal of products and services from the market. Here, Professor Priest questions the conceptual and empirical claims behind Croley and Hanson’s call for absolute liability. He presents an analysis of general aviation, a prominent product market heavily affected by the expansion of liability, to underscore the authors’ contrasting conceptions of efficiency in tort. In order to demonstrate the destructive effects of contemporary tort law, he adduces statistics that show a dramatic decline in general aircraft production despite a concurrent decline in the product accident rate. He suggests that significant analytical and empirical issues need to be addressed before Croley and Hanson’s recommendation of absolute manufacturer liability can be adopted.

Almost everyone who has taught at the Yale Law School concurs that our students work as hard and give as great attention to faculty ideas as students at any school in the country. In this fine tradition, in an article published in the Winter 1991 issue of this Journal,1 Steven P. Croley and Jon D. Hanson present a minutely detailed discussion of much of my academic work of the last decade.2 It is surely wonderful for a teacher to have students who read one’s work. And it is yet more wonderful to have students who read the

†John M. Olin Professor of Law and Economics and Director, Program in Civil Liability, Yale Law School.

1. Steven P. Croley & Jon D. Hanson, What Liability Crisis? An Alternative Explanation for Recent Events in Products Liability, 8 YALE J. ON REG. 1 (1990) [hereinafter Croley & Hanson].

2. Indeed, their article is so minutely detailed that it alone elevates me immediately among the ranks of the most-cited. On a quick count, Croley and Hanson cite various of my articles 268 times and, of these, my article The Current Insurance Crisis and Modern Tort Law, 96 YALE L.J. 1521 (1987) [hereinafter Priest, Insurance Crisis] a total of 89 times. Regrettably, their efforts barely missed inclusion in a recent poll of the most-cited articles of the Yale Law Journal from 1985-89. The citations in the Croley-Hanson article alone would have placed me fourth on this celebrated list, rocketing me ahead of Laurence Tribe, John Ely and my friend Owen Fiss, among other luminaries. See Fred R. Shapiro, The Most-Cited Articles From the Yale Law Journal, 100 YALE L.J. 1449, Table II at 1464 (1991).

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entirety of one’s work. Thus, it can only be a small disappointment\(^3\) that Messrs. Croley and Hanson, having read the entirety of my work, disagree with so much of it.

Though the vast bulk of their article consists of criticisms of individual points I have made, there is a serious difference between our analyses of recent phenomena in the field of products liability that is important for understanding and evaluating the direction of modern law. Croley and Hanson stand virtually alone among modern commentators in endorsing absolute liability for product manufacturers. Most students of the field, including myself, having witnessed the extraordinary expansion of liability since the first adoption of the strict liability concept and having witnessed, especially in recent years, the widespread withdrawal of products from markets on liability grounds, have concluded that products liability standards should be substantially rolled back. Croley and Hanson, in sharp contrast, have devised an argument implying that these recent product withdrawals have benefitted consumers and, indeed, that consumers would benefit from additional product withdrawals that would occur if products liability standards were expanded even further to the point of absolute liability.

The differences between the Croley-Hanson proposals and my own, therefore, address one of the most significant and hotly contested issues of law reform today. Since virtually all academic commentators recommend restriction of current standards of liability,\(^4\) it is important for this debate to evaluate the merits of any argument—including the ambitious effort of Croley and Hanson—in favor not simply of the retention of current standards, but of their further expansion. Toward this end, I will try to simplify their long and fractious paper to clarify the basis for their recommendation of absolute liability in order to differentiate their work from the recommendation that I and many others have made that products liability standards should be sharply rolled back.\(^5\) I will also present recently acquired empirical evidence that should help law reformers choose between the two opposing sets of recommendations.

The Croley-Hanson article consists of four parts. The first two parts present a mass of criticisms of my analysis. The second two, while adding further criticisms, are more constructive, presenting the authors’ interpretation of recent withdrawals of products and services and their proposals for absolute manufacturer liability. I will attempt to reply to the most important of their criticisms in Part I of this response. A very large part of their criticism of my work stems from a confusion over my basic argument. In Part I, I attempt to clear some

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3. See id.
4. See Croley & Hanson, supra note 1, at 7 (as Croley and Hanson emphasize).
5. I have addressed these issues more systematically in Justifying Tort Reform in our Confused System of Accident Law, Working Paper #142, Program in Civil Liability, Yale Law School (July, 1991).
of the underbrush that now conceals our differences. This explanation will only sharpen the conflict between us and sharpen their criticism of my work.

In Parts II and III of this response, I will address the differences between our interpretations of recent developments in product and service markets. Part II shows how both of our treatments derive from an effort to make sense of a very unusual empirical phenomenon upon which we both agree: the substantial increase over time in product-related claims and payouts and the consequent withdrawal of products from the market, despite decline or stability in the underlying accident rate associated with these products. Part II examines with greater care the differences in our empirical judgments of the importance of various determinants of consumer product choice. It addresses the Croley-Hanson argument that consumers systematically underestimate nonpecuniary losses and their claim that consumer recoveries for product-related losses from first-party insurance sources generate a systematic underpricing of risky products—they call it the "first-party insurance externality"—which only absolute manufacturer liability can repair. Part III presents some new empirical data suggestive of the magnitude of these various factors in a prominent consumer product market. Finally, Part IV briefly addresses more specific failings of the Croley-Hanson proposal for absolute manufacturer liability.

I. Some Criticisms Answered

This Part responds to Croley and Hanson's central criticisms of my work. Before attempting this response it is important to note that, although it might not be immediately apparent, our approaches to the liability problem are identical in very substantial respects. Despite their multitude of criticisms and their repeated emphases of difference, we agree on the empirical phenomena to be explained. In particular, we agree that in recent years the expansion of tort liability has made it unprofitable to produce or offer various types of manufacturing equipment, consumer goods and consumer services, all of which, as a consequence, have been withdrawn from markets. We also concur that recent dramatic increases in insurance premiums and simultaneous reductions in levels of insurance coverage (associated with what has been called a "crisis" in liability insurance) are only less severe reactions to the same expansion of liability. Finally, we agree on the basic analytical methods of law and economics to try to explain these phenomena.

6. Regrettably, I will not be able to address each of their complaints in this brief response. Since my work on these issues is continuing, readers interested in further treatment of other issues which Croley and Hanson contest may look to forthcoming work. For discussion of the relationship between liability rules and research and development investments, discussed in Croley & Hanson, supra note 1, at 12 n.51, and of activity level effects, discussed in Croley & Hanson, supra note 1, text accompanying notes 66-67, 223-47, see George L. Priest, Internalizing Costs (Jan. 15, 1990) (unpublished manuscript, on file with the author) [hereinafter Priest, Internalizing Costs]. See also infra note 18.
The principal difference between us is in the explanation of why the expansion of liability has made the sale of these various products and services unprofitable. In short, Croley and Hanson claim that the expansion of liability corrects two failings of consumer product markets: first, the failure of consumers to place a high enough value on pain and suffering losses from product-related injuries; and second, the tendency of consumers, once injured by products, to ignore their opportunities under products liability law in favor of recovery from their first-party health and property insurers. On these grounds, Croley and Hanson not only applaud product and service withdrawals, but recommend an additional expansion of products liability law to full "enterprise liability"---absolute manufacturer liability---in order to achieve even further product and service withdrawals.

My analysis is different. In my view, the expansion of products liability has made large numbers of products and services unprofitable because, in essence, it has tied an insurance contract to product sales that is more expensive to consumers than it is worth. Products and services have been withdrawn because the addition of this insurance premium has raised prices beyond the demand of a sufficient set of consumers to make these products and services marketable. On these grounds, I and many others have recommended restricting products liability standards to the minimum level necessary to achieve optimal product safety without the addition of products liability insurance.8

Obviously, the principal difference between the Croley-Hanson analysis and my own derives from our respective characterizations of the welfare effects to consumers of damages recoveries in products liability judgments and settlements. Unfortunately, however, much of the Croley-Hanson argument addresses propositions I have never advanced. A brief clarification, therefore, will aid in the demonstration of why we reach such radically different conclusions from observations of identical phenomena.

A. Clarifying the Confusion Regarding the Effects of Absolute Manufacturer Liability

To appreciate the difference between the Croley-Hanson argument and my own, it is important to see that our central difference is analytical, not empirical. Croley and Hanson characterize my position as an empirical one, chiefly related to recoveries for nonpecuniary damages such as pain and suffering. For

example, they repeatedly insist that my analysis requires the demonstration that “manufacturers have been held liable for nonpecuniary losses most often for accidents that were care-unpreventable” (that is, accidents manufacturers could not have prevented cost-effectively); that I must show pain and suffering damages to be awarded mainly in such cases; or that I must prove that “the bulk” of pain and suffering awards have been for such accidents. Croley and Hanson then excoriate me and dismiss my analysis because of my failure to provide empirical evidence describing the accident contexts of recent pain and suffering awards.

But Croley and Hanson here are taking much too narrow a view of my argument, and therefore miss my basic point. Unfortunately, this misunderstanding pervades their paper. It accounts for confusion extending from their prolonged discussion of whether I would allow pain and suffering awards in any form to their claims that my analysis implies that insurance markets would unravel under a rigorous cost-benefit standard.

My point is straightforward. First, although Croley and Hanson thrash around on this issue, my writings have made crystal clear analytically that, when a manufacturer could have cost-effectively prevented an accident—for example by a change in product design—but has failed to do so, a manufacturer should be liable both for all pecuniary as well as nonpecuniary losses to injured consumers. This proposition forms the basis of both my affirmative proposals for tort law standards as well as of my criticisms of no-fault regimes. Indeed, the proposition is so basic to my approach—and, incidentally to the best of my knowledge, to the approaches of everyone else in the law and economics field—that it is difficult to comprehend the source of the

9. Croley & Hanson, supra note 1, at 23.
10. Id. at 22.
11. Id. at 22. See also id. at 58.
12. Id. at 17-23.
13. Id. at 17-23.
14. In the Croley & Hanson locution, these are “care-preventable accidents.” See id. at 15.
Croley-Hanson confusion. But let us put to rest all controversy between us on this issue.

The analytical difference between Croley and Hanson and myself, instead, stems from the treatment of the expansion of liability beyond this point. According to my approach, any recovery beyond that required by a legal standard compelling optimal accident reduction by manufacturers can be regarded as providing a form of insurance to consumers for product-related losses through a third-party insurance mechanism. To evaluate the effects of providing insurance this way, third-party insurance provided through tort law recoveries must be compared carefully to first-party insurance that would otherwise provide coverage for the same losses. Careful examination shows that there are substantial differences between typical first-party coverage and the third-party coverage provided through tort law. Portions of the respective insurance coverages may seem identical. Some portions of the pecuniary elements of tort law recoveries (for example, lost income and medical expenses) will correspond to pecuniary elements of first-party insurance coverage. For these amounts, the effect of the expansion of liability is only to shift the source of the insurance from a first-party to a third-party carrier. If the mechanisms of first-party and third-party coverage were equivalent, the expansion of liability would have no effect with respect to these amounts. While I have argued strongly that there are substantial differences between first- and third-party coverage so that consumers are harmed from even the shift of these amounts, that argument is not related to the Croley-Hanson confusion as to my approach.

The more important difference between us relates to the analysis of all other elements of tort law insurance recoveries. Croley and Hanson focus almost entirely on the pain and suffering element of tort damages which forms the centerpiece of their theory, but our differences extend substantially beyond coverage of pain and suffering. First-party insurance coverage and tort law damages provide significantly different levels of coverage for identical pecuniary losses. For example, first-party insurance universally incorporates deductibles and coinsurance provisions that compel the insured to bear 20% to 40% of pecuniary losses. Tort law recoveries, by contrast, impose neither deductibles nor coinsurance of this nature. In addition, the entire tort recovery for nonpecuniary losses is different from any first-party insurance coverage. That is, first-party insurance provides no coverage whatsoever of pain and suffering.

18. In the Croley & Hanson locution, these are called "care-unpreventable accidents." Croley & Hanson, supra note 1, at 15. Again, as described earlier, Croley & Hanson and I squabble over the definition of the optimal, in particular as it is defined with respect to activity level effects. See supra note 5, and Priest, Internalizing Costs, supra note 6. This dispute, however, is irrelevant to the issue at hand.


20. See id. at 1553-56 (explaining these provisions in greater detail).
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loss, while pain and suffering comprises a significant portion of tort law damages for almost all injuries.

My analysis follows simply from the observation of differences between first and third-party coverage. As I see it, just as the open and voluntary market for any commodity provides a measure of the extent to which consumers value the commodity given its production costs, so the open and voluntary market for first-party insurance provides a measure of consumer benefit from insurance. It follows that, to the extent third-party insurance coverage through tort law provides recovery in greater amounts than typical first-party insurance, it provides consumers with greater insurance than they would voluntarily purchase.

It also follows that social welfare is diminished by the judicially mandated provision of excessive insurance. Just as a government mandate that every American meal include beefsteak would compel consumers to purchase a form of nourishment not desired by many at a cost greater than consumer benefit, so the judicial mandate that every product purchase include the purchase of insurance delivered through tort law compels consumers to obtain insurance at a cost greater than the consumer benefit from the insurance.

According to my analysis of the problem, thus any recovery of damages in contexts lying beyond the point of optimal accident reduction provides consumer with a form of insurance that they do not want. Therefore, any recovery of this nature diminishes consumer welfare. Croley and Hanson misunderstand this point. They fiercely criticize me for failing to show empirically how much of modern tort payouts represents recoveries for what they call “care-unpreventable” accidents (as if anyone were able to look behind judge or jury decisionmaking in this regard), and dismiss my analysis because of the lack of empirical proof. But my criticism of our modern regime is analytical, not empirical. To the extent that courts award recoveries—or expecting such recoveries, parties settle disputes—in accident contexts in which the tortfeasor could not have cost-effectively prevented the accident, I claim welfare has been diminished.

Eliminating this source of confusion, however, does not end the battle. Croley and Hanson disagree with my analysis on many other grounds as well. Indeed, the disagreement is more basic. In Part I of their article, Croley and Hanson claim, contrary to my views, that third-party insurance coverage

21. Croley and Hanson contest this point and claim to present multiple empirical examples of a first-party insurance market for coverage of pain and suffering. Croley & Hanson, supra note 1, at 60-65. For a discussion of their arguments, see infra text accompanying notes 37-55.

22. My study of the Cook County, Illinois trial courts shows pain and suffering comprising on average 47% of tort law damages in cases tried to juries from 1959-79.

23. Croley & Hanson, supra note 1, at 23.

24. Priest, Modern Tort Law Reform, supra note 8, at 14-20; Priest, Insurance Crisis, supra note 2, at 1553-63.
through the tort system is far more beneficial to consumers than first-party coverage. In Part II, somewhat differently, they criticize my explanation of the mechanism—risk pool unravelling—through which the provision of unwanted third-party insurance to consumers would lead to the withdrawal of products and services from markets. Sections B and C respond to these more specific complaints.

B. Do Consumers Want Insurance Coverage for Pain and Suffering?

The sharpest point of difference between Croley and Hanson and myself relates to our analysis of third versus first-party insurance coverage: I claim that third-party coverage through tort law diminishes welfare; Croley and Hanson vigorously disagree. Croley and Hanson present a variety of objections to my analysis that can be distilled into two basic criticisms. Regrettably, the first criticism is based upon a conceptual error and the second, if it were plausible, would severely undercut the remainder of their analysis.

Croley and Hanson’s first criticism is that I have simply gotten the numbers wrong. They claim that, for identical losses, recoveries under first-party insurance coverage are actually greater than under third-party tort law damages. Croley and Hanson estimate that, on average, third-party coverage is “less than half of the comparable coverage under first-party insurance.” If this were true, then it would surely be error for me to conclude that tort law recoveries provide insurance in greater amounts than consumers desire.

Analytically, these two criticisms by Croley and Hanson are unrelated, except that they are both directed against positions that I have taken. That is, if Croley and Hanson truly believe that consumers actually benefit from third-party insurance coverage through tort law, there is little point in quibbling about the mechanism of risk pool unravelling since there is no occasion for unravelling to occur. A reader should not presume, however, that the substantial attention they give to the unravelling problem and to alternative explanations of it represents an admission of a lack of consumer demand for third-party coverage.

Sensibly, Croley and Hanson ignore these inconsistencies and build their principal attack on my work upon separate arguments which form the heart of their affirmative explanation of the effects of the expansion of liability. See infra Part II.  

Croley and Hanson also dispute my claim that total administrative costs are greater when insurance is delivered through a third-party tort mechanism than through first-party coverage. Id. at 14-17. Although the authors only address my discussion, this proposition, of course, is conventional wisdom and has formed the basis of the no-fault movement since the early 1960s. See, e.g., ROBERT E. KEETON & JEFFREY O’CONNELL, BASIC PROTECTION FOR THE TRAFFIC VICTIM: A BLUEPRINT FOR REFORMING AUTOMOBILE INSURANCE (1965). Croley and Hanson’s objections consist of a theoretical claim about the relative administrative simplicity of strict liability first presented by Judge Posner in 1973, see Richard A. Posner, An Economic Approach to Legal Procedure and Judicial Administration, 2 J. LEGAL STUD. 399 (1973), and of the incorrect assertion that the empirical data that I present to support the point neglect settlement costs in the comparison of the total costs under the two regimes, see Priest, Insurance Crisis, supra note 2, at 1560 and sources cited therein. Readers interested in further discussion of this issue may refer to a more careful empirical examination of relative administration costs that I am completing, forthcoming 1992.
Though Croley and Hanson carefully present an arithmetic generating their estimate, the point is nearly incredible on its face. Croley and Hanson do not dispute that the typical first-party award incorporates no pain and suffering component while pain and suffering is a significant (and, they claim, growing) element of tort law damages. Moreover, the most casual observation indicates that injured victims bringing suit are seeking something. Croley and Hanson and I are principally addressing the implications of litigation by individuals who possess first-party insurance coverage. If these individuals were better off with first-party recoveries than with tort law damages, as Croley and Hanson claim, why would they bother with litigation?

Croley and Hanson ignore this truism, however, and present an estimate that derives from a fundamental conceptual error. The error relates to their misunderstanding of my analysis of the welfare loss that results from expanding liability beyond the point of cost-effective accident prevention. Croley and Hanson agree that, where damages are actually awarded through tort law for a particular injury, those damages are greater than comparable first-party coverage. They derive the higher first-party coverage figure, however, by discounting the tort law damage award by the probability that a claimant will recover a tort law judgment. Thus, they compare first-party coverage for a given injury to a product liability judgment for the same injury multiplied by 38%. The statistic, taken from an early study by myself and Mark Peterson, represents the proportion of product liability plaintiffs recovering judgments after jury trials.

This is a conceptual error. To evaluate the insurance implications of first-party coverage versus tort law damages for the same injury is to ask simply how the figures for the two forms of coverage compare in magnitude. Where a victim with a broken leg would recover $25,000 from a first-party insurance source in contrast to recovering between $41,000 and $58,500 from a tort law judgment, one can conclude that the tort law coverage is higher. Again, I

29. Croley & Hanson, supra note 1, at 25-26.
30. See, e.g., id. at 52-53.
31. Id. at 13 n.57.
32. See id. at 25-26.
33. Id.
35. For reasons they do not explain (though it gives them better results), Croley and Hanson persist in using 38% as the estimate of a products liability claimant’s chance of success at trial, ignoring the findings of a later, more careful study (to which, prior to publication, I repeatedly referred them) that found products liability plaintiffs recovering on average 42.8% of the time. George L. Priest & Benjamin Klein, The Selection of Disputes for Litigation, 13 J. LEGAL STUD. 1, 40-41 (1984). For other examples of the authors’ mishandling of empirical data, see infra nn.63, 70.
36. These differences correspond to my estimate that tort law damages on average were from 1.64 to 2.34 times as great as first-party coverage for the same injury. Priest, Insurance Crisis, supra note 2, at 1556.
have claimed that consumer welfare is reduced wherever tort law damages are recovered beyond the point of optimal accident reduction. That only 38% or 42.8% of products liability claimants succeed at trial is irrelevant. Wherever plaintiffs recover products liability damages in products liability cases in contexts in which manufacturers could not have cost effectively prevented the accident, consumer welfare declines because of the greater comparative costs of the insurance. If half of the 42.8% of successful products liability actions involved non-preventable accidents, one could conclude that consumer welfare was reduced in 21.4% of all litigated cases. But welfare-reducing recoveries in 21.4% of cases does not mean that third-party damages should be discounted by 21.4%. Instead, these recoveries mean clear welfare losses to consumers 21.4% of the time a suit is filed.

Croley and Hanson's second criticism, if it were plausible, would be even more damaging to my analysis. I conclude that, where a tort award serves an insurance effect, damage elements that do not correspond to typical first-party health insurance do not benefit consumers relative to their costs. Of course, prominent among these diverging damage elements is the component for pain and suffering.\(^\text{37}\) I argue that, since consumers do not voluntarily purchase first-party coverage for pain and suffering, the provision of such insurance through tort law does not benefit consumers in an amount equal to its cost.\(^\text{38}\)

Croley and Hanson claim that I am wrong on the facts. They claim that there is substantial consumer demand for and benefit from insurance for nonpecuniary losses such as pain and suffering, but that contracting problems\(^\text{39}\) restrict its availability to specific, unique markets that I have ignored. Croley and Hanson use as examples, the voluntary market for accidental death and dismemberment insurance, and the market for life insurance for children.\(^\text{40}\) In addition, Croley and Hanson argue that judges and jurors, who are consumers themselves, illustrate consumer demand for insurance for pain and suffering by

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37. Croley and Hanson focus exclusively on pain and suffering and ignore my points about the difference between first- and third-party coverage of pecuniary losses.


39. The contracting problems Croley and Hanson adduce are the lack of information about the level of pain and suffering that a consumer will experience and more typical problems of adverse selection and moral hazard. Croley & Hanson, supra note 1, at 61-65. Oddly, in the same discussion, Croley and Hanson describe insurer contracting techniques to combat adverse selection and moral hazard—sales of fixed amounts of coverage at set premiums—but do not explain why these standard contracting techniques are so inadequate to allow the provision of only small amounts of coverage for pain and suffering. Croley & Hanson, supra note 1, at 64-65. My analysis concludes to the contrary that the absence of pain and suffering coverage reflects the absence of consumer demand. For a similar analysis, see John E. Calfee & Paul H. Rubin, Some Duplications of Damage Payments for Non-Pecuniary Losses, J. LEGAL STUD. (forthcoming June 1992).

40. Croley & Hanson, supra note 1, at 60-65.
frequently awarding pain and suffering damages in cases involving injured consumers.\textsuperscript{41}

Croley and Hanson’s references to accident insurance and children’s life insurance as examples of first-party coverage of pain and suffering are interesting, but unpersuasive. To my knowledge, there are no careful studies of the market for accident insurance and its relationship to more typical health and life coverage, so their accident insurance discussion reflects a totally novel interpretation that accident insurance is designed to cover nonpecuniary losses. The authors’ first example is insurance coverage for accidental dismemberment. They argue that, since such coverage is offered in fixed rather than variable sums (for example, $2,500 for the loss of a foot), coverage must be of nonpecuniary rather than variable pecuniary loss.\textsuperscript{42} To my mind, the fixed sum feature of accident insurance tells us very little. The important question is to distinguish the pecuniary from the nonpecuniary aspects of such a loss. It is not clear whether Croley and Hanson are claiming that nonpecuniary losses are fixed rather than variable, or that moral hazard problems are greater in one context than another requiring a fixed amount.\textsuperscript{43} Their attribution of the entire amount as representing coverage of nonpecuniary loss is merely an assertion.

Their next specific example of first-party coverage for pain and suffering is the common life insurance policy provision that doubles coverage if death is accidental. Here, Croley and Hanson have simply not thought through the issue completely. They argue that the pecuniary loss from death is not greater simply because the death is accidental. They surmise, therefore, that perhaps “the justification for this otherwise inexplicable distinction [double indemnity for death from accidental causes; single, from natural causes] is that accidental deaths are more likely to result from injuries that cause more significant pain and suffering.”\textsuperscript{44} That is, according to the Croley-Hanson interpretation, single indemnity may represent coverage of pecuniary losses, but double indemnity must represent coverage of pain and suffering prior to death. It is an interesting speculation that the total quantum of pain and suffering to a victim is greater in the period just prior to death than where the victim survives. But the issue here is consumer demand for coverage for his or her own pain and suffering. A consumer must be very optimistic about the insurance claims process to believe that a carrier will pay double indemnity on an accidental death policy in time to compensate him or her for the greater pain suffered prior to death.\textsuperscript{45}

\textsuperscript{41. Id. at 61.}
\textsuperscript{42. Id. at 64-65.}
\textsuperscript{43. Croley and Hanson make no effort to indicate any relationship between the purchase of accident coverage and the possession of other coverage of pecuniary losses, say, with workers’ compensation or separate disability or health policies.}
\textsuperscript{44. Croley & Hanson, supra note 1, at 60 n.200.}
\textsuperscript{45. Though surely deserving further study, my hunch is that consumer demand for (or acceptance of) policies with double indemnity provisions for accidental death reflects the recognition that the decedent’s financial affairs are less likely to be in order where death is accidental, rather than from natural causes.
Next, Croley and Hanson claim that the substantial consumer demand for life insurance for children indicates a market for coverage of nonpecuniary loss since the death of a child does not generate substantial pecuniary loss to a parent. To their credit, Croley and Hanson discovered new information on this point from a publication entitled *Life Insurance Fact Book*. Croley and Hanson show that, according to this source, 14% of all life insurance policies written during 1987 were written on children fifteen years or under.

Unfortunately, Croley and Hanson have not pursued this example with sufficient care. The authors do not attempt to distinguish the extent to which children's insurance is written as whole life or term insurance, though the distinction is critical to the analysis. As is well known, whole life insurance has a significant savings component and serves as an instrument for a diversified investment with substantial tax advantages, in contrast to other investment vehicles such as mutual funds. A more detailed examination suggests that most, if not all, of this insurance represents pecuniary investment of this nature. The Croley-Hanson statistic that 14% of policies were written on children less than fifteen years of age has remained constant through 1989. An even more impressive figure from the same source shows that 40% of all children are covered by some form of life insurance. Further examination, however, demonstrates that exactly half of this 40% sector consists of children covered by parental riders (most typically in small amounts—$2,500—suggesting that these policies are chiefly intended to cover funeral costs). Of the remaining 20% of children with individual policies, 18.5% are covered by whole life, and only 1.5% by term life insurance policies. The 1.5% of children covered by

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46. Croley & Hanson, *supra* note 1, at 63 n.210. This evidence, if confirmed, would be particularly telling to my analysis since I employ as my principal example for the lack of consumer benefit from insurance for nonpecuniary losses the absence of consumer demand for life insurance for children. Croley and Hanson cite my colleague Alan Schwartz for this point, *id.* citing Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis,* 97 YALE L.J. 353, 365 (1988), rather than my discussion of the point in Priest, *Insurance Crisis,* supra note 2, at 1546-47.


49. It is not necessary to my argument to show that term insurance is never purchased for children. In our complex society, many individuals are economically dependent upon the earnings of children, such as child actors or actresses or heirs, thus justifying the purchase of term life insurance to protect pecuniary losses. Croley and Hanson do not address these possibilities.


51. *id.* at 37. Croley and Hanson do not discuss this figure, but, because it has a larger base than total policies, it permits distinctions to be made.

term life insurance is very slim evidence of substantial consumer demand for insurance coverage for nonpecuniary loss.\textsuperscript{53}

Finally, Croley and Hanson's argument that the award of third-party pain and suffering damages by judges and jurors indicates consumer demand for first-party pain and suffering insurance\textsuperscript{54} is problematic at best. Fundamentally, this must be an assertion about the relationship between personal juror preferences and the range of available jury discretion, though the authors do not discuss the jury nullification literature on this point. To understand the difficulty with the Croley and Hanson assertion, imagine that a judge has instructed a jury that the law allows the award of damages for losses related to the impairment of a victim's non-market activity, say recreational bowling or dancing, and that the jury has awarded some amount of pain and suffering for the victim's impairment. It is not obvious that the award represents a demand by jurors as consumers for bowling or dancing insurance. The Croley-Hanson argument needs further refinement.\textsuperscript{55}

At a more general level, Croley and Hanson may believe that there is significant evidence of an insurance market for coverage of nonpecuniary losses, but it is not clear that its demonstration would advance the more important points of their analysis. As described more fully in Part II of this response, the principal innovation of the Croley-Hanson analysis is the idea that the law must be expanded to absolute manufacturer liability because consumers of products systematically underestimate the magnitude of nonpecuniary losses that they might suffer from product injuries. Absent a demonstration that there is something peculiar about product markets that distorts consumer expectations regarding nonpecuniary losses, this point conflicts both with their claim that a substantial market for nonpecuniary coverage already exists, and with their explanation that only contracting problems—not systematic underestimation—prevent nonpecuniary coverage from being attached to first-party policies.\textsuperscript{56} Croley and Hanson argue that consumers actively express significant demand for insurance for nonpecuniary loss in several contexts. It seems unlikely that these same consumers would be, as Croley and Hanson also argue, completely incapable of perceiving and pursuing their need for nonpecuniary loss coverage when they purchase goods and services.

\textsuperscript{53} See supra note 49.
\textsuperscript{54} Croley & Hanson, supra note 1, at 61.
\textsuperscript{55} Croley and Hanson make other arguments about the role of the jury in pain and suffering awards which I discuss. See infra text accompanying note 78.
\textsuperscript{56} Croley & Hanson, supra note 1, at 60.
C. What Constitutes Risk Pool Unravelling?

Croley and Hanson's second principal criticism of my work is that I both misunderstand and fail to explain adequately the mechanism—risk pool unravelling—by which the lack of consumer demand for third-party insurance delivered through the tort system generates product and service withdrawals. This criticism forms the heart of Part II of the Croley-Hanson article. Their complaints are multiple: They claim that for unravelling to occur, consumers must know their personal risk levels, and that it is unlikely that many consumers do so. They deny that consumers with high incomes constitute a distinguishable risk category. They assert that manufacturers have many methods of segregating risk classes—for example, by product design and marketing—which can serve to combat adverse selection in consumer markets. They make similar arguments about unravelling in producer risk pools.

These various criticisms, however, are largely irrelevant to the deeper differences between us concerning the welfare effects of the expansion of liability. The issue can be resolved very simply. All of us agree that the expansion of liability has generated product and service withdrawals. The difference between our approaches lies in our evaluations of whether these product and service withdrawals have benefitted or harmed consumers. What I describe as risk pool unravelling is only the technical explanation of the process through which the absence of demand for the insurance provided through modern tort law will be expressed in a consumer product or service market. This process is not a mysterious one. It consists of no more than the progressive decisions of consumers not to buy products and services attended by third-party insurance because the prices for these products—including the price for the insurance—are greater than the benefits. The process does not require careful consumer understanding of risk as Croley and Hanson emphasize. It requires only a consumer conclusion that the product, at its insurance-included price, is not worth purchasing. If this process occurs rapidly, it will appear as simply an absence of demand. If the process occurs relatively more slowly, it can be

57. See id. at 28-51.
58. Id. at 29.
59. Id. at 31-33.
60. Id. at 34. Croley and Hanson omit references to extensive work I have earlier published on this issue.
61. Croley & Hanson, supra note 1, at 39-49. Croley and Hanson do emphasize a point that has not received sufficient attention in my work: the interrelationship between the occurrence of adverse selection in consumer risk pools and the likelihood of adverse selection in producer risk pools. Id. at 44. Their point is a good one and deserves both analytical and empirical attention.
62. See supra text accompanying note 24.
Absolute Liability

described as risk pool unravelling. The analytical understanding of the phenomenon should be identical whatever its nomenclature.

Though this issue provides grounds for further Croley and Hanson criticism, it is not central to the principal difference between our analyses, to which I now turn. Part II focuses upon the Croley-Hanson claim that product consumers systematically underestimate nonpecuniary losses and that consumers injured in product-related accidents too often recover from first-party insurance pools, creating a first-party insurance externality. It is these two claims that form the more substantial grounds for their recommendation of absolute manufacturer liability.

II. The Modern Economic Analysis of Products Law and Why We See It Differently

This Part attempts to place the Croley-Hanson analysis and my analysis in the context of the economic approach toward liability rules in order to demonstrate how our different empirical judgments generate radically different proposals.

A. Products Liability in a Market Setting

The standard economic analysis of liability rules distinguishes two basic contexts for the operation of these rules. The first is a non-market setting such as auto collisions, in which the injurer and victim do not negotiate in advance over precautions. The second is a market setting such as products liability in which the injurer and victim participate in a relationship that is affected by

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63. The most curious empirical phenomenon to emerge during the insurance market disturbances or "crisis" of 1985-87 was that insurance premiums increased at a rate much greater than any apparent underlying increase in claims costs or the accident rate. Croley and Hanson merely dismiss my interpretation of this divergence. I claim that it is strong evidence of risk pool unravelling, which caused insurance premiums to accelerate relative to underlying claims costs as low-risk insureds within risk pools successively dropped out of the pools. Priest, Insurance Crisis, supra note 2, at 1576-79. Under the Croley-Hanson theory that the expansion of liability is merely forcing excessively risky products off markets, the evidence is very hard to explain: claims costs and insurance premiums should track the underlying accident rate. At various points, Croley and Hanson assert that claims costs may be rising in relation to the accident rate because courts have increased awards for pain and suffering, Croley & Hanson, supra note 1, at 22-23, but they present neither doctrinal innovations regarding pain and suffering nor any empirical evidence to support such an assertion.

64. Croley and Hanson's misunderstanding of the process generating unravelling is further reflected in their criticism that risk pools would unravel even if courts were to restrict liability to the standards that I propose. Croley & Hanson, supra note 1, at 38-39. It has been a fundamental proposition of the economic analysis of liability rules from the earliest articles on this subject that, if a manufacturer or other tortfeasor were held liable only for failing to take cost-justified precautions, they would take such precautions and prevent all accidents that could be cost-justifiably prevented. John P. Brown, Toward an Economic Theory of Liability, 2 J. LEGAL STUD. 323 (1973). Thus, contrary to Croley and Hanson, there would be no occasion for unravelling.
market activities such as consumer purchase or manufacturer pricing decisions.\textsuperscript{65} Croley and Hanson and I address the effects of liability rules in market settings.

In the context of a product market, it is well accepted that it is possible to define a set of conditions according to which changes in law will have no effect whatsoever.\textsuperscript{66} The three conditions are: that product markets are competitive; that consumers are well-informed; and that both manufacturers and consumers have sufficient access to insurance so that there is no effective differential between manufacturer and consumer risk aversion.\textsuperscript{67} Given these conditions, it is well established—as Croley and Hanson and I agree—that a change in the law toward greater or lesser manufacturer liability will have no effect on the number of product-related accidents, the number of products produced and consumed (the level of product activity), or on the price of the product faced by consumers.\textsuperscript{68}

To understand the differences between the Croley-Hanson article and my work, it is important to understand precisely why the analysis leads to that result: that is, why under this set of conditions there will be exactly the same product output, the same product price, and the same number of product injuries whether the legal rule provides for no manufacturer liability, absolute manufacturer liability, or a standard of liability anywhere in between.

Competitive markets, well-informed consumers, and the absence of differential risk aversion define the set of conditions necessary to ensure that all costs associated with the product and with its use, including injury costs, are fully internalized to the market irrespective of the assignment of liability. The competitive market assumption implies that price equals marginal cost. The assumption that consumers are well-informed implies that consumers take the costs of product injuries into account whether manufacturers are liable for product injuries or whether consumers must bear product-related losses themselves. The equality of risk aversion assumption implies that there are no effective insurance reasons to differentiate one assignment of liability from another.

Most important for understanding the Croley-Hanson analysis is the assumption that consumers are well-informed. This assumption implies that consumers


\textsuperscript{66} This definition, of course, is simply a refinement of the Coase Theorem. Ronald H. Coase, \textit{The Problem of Social Cost}, 3 J.L. & ECON. 1, 42 (1960).

\textsuperscript{67} See generally A. Mitchell Polinsky, \textit{An Introduction to Law and Economics} 11-14, 50-52, 87-90 (1983) (for a discussion of these conditions); Shavell, \textit{supra} note 65, at 1.

\textsuperscript{68} See generally Polinsky, \textit{supra} note 67, at 88 (for discussion of conditions). Shavell, \textit{supra} note 65.
will fully appreciate the risks of product injuries and take them into account in product purchases regardless of the liability standard. Obviously, if manufacturers are liable for all product-related injuries, the costs of such injuries will be built into the nominal product price. But where consumers are well-informed about product injuries, they will take injury costs into account and adjust their product purchases accordingly even if manufacturers are immune from liability. It is helpful here to consider what I will call the "full" price of the product: manufacturing costs plus injury costs. Under absolute manufacturer liability, the nominal price of the product is the full price. Under zero manufacturer liability, the nominal price of the product reflects only manufacturing costs. The full price of the product is the same, however, given the assumption that consumers are well-informed. In selecting among products, well-informed consumers will consider not only the nominal product price, but also the full price including expected accident costs. Thus, since well-informed consumers face the full product price whether manufacturers are liable for losses or not, this analysis implies that the standard of manufacturer liability will have no effect on the volume of products purchased or the number of product-related injuries. Croley and Hanson fully accept this analysis.69

B. The Assumptions Challenged: The Differences Between Our Views Explained

Croley and Hanson and I conclude alike that the expansion of liability in modern products contexts has had substantial effect on the character of product markets. Indeed, we agree that the expansion of liability has driven large numbers of products and services from markets. Since the economic model described above indicates conditions under which a change in liability standards—expansion or restriction—will have no effect on markets, both of our analyses must be relaxing some of the idealized assumptions of the model. In order better to appreciate the differences between our approaches, it is helpful to see how we treat these assumptions differently, especially in the context of the empirical phenomena that we both are trying to understand.

My work has attempted to provide a theory to explain various empirical developments in product markets in recent years. To my mind, the key empirical developments in recent years have been the substantial increases in products liability payouts, and the increasing numbers of products that have been withdrawn from product markets, all in a context of secular declines in product-related accident rates. Croley and Hanson agree that payouts have increased and that products have been increasingly withdrawn from markets. They are less

69. See Croley & Hanson, supra note 1, at 75.
committal with respect to a decline in the accident rate, though such a decline is more crucial to my analysis.

My explanation of these phenomena challenges the assumption of non-differential risk aversion between consumers and manufacturers as defined by the standard economic analysis of liability rules. My explanation is that the law has expanded by extending liability to new and different contexts, providing increasing forms of insurance to consumers through the third-party tort law mechanism. This expansion of liability has caused total liability payouts to increase, although the underlying accident rate has declined. As a further consequence, products and services have been withdrawn from markets because consumers do not value the new forms of insurance at the prices that must be charged for them. On these grounds, I (and many other commentators) recommend restriction of current liability standards.

Croley and Hanson explain these phenomena quite differently, in part by challenging a different set of assumptions from the standard economic analysis of liability rules. They make two fundamental points. First, they claim that consumers systematically underestimate nonpecuniary losses from product injuries. Second, they claim that third-party insurance through absolute manufacturer liability is more efficient than first-party insurance. The next two subsections evaluate these aspects of the Croley-Hanson argument.

1. Croley and Hanson's Analysis of Consumer Underestimation of Nonpecuniary Loss

Although Croley and Hanson do not put the point in quite these terms, their first major argument is that consumers systematically underestimate nonpecuniary losses from product injuries. Consumer underestimation of nonpecuniary losses can explain why the expansion of manufacturer liability in recent years has led to increased product withdrawals. Again, according to the idealized assumptions of the standard economic analysis of liability rules, if consumers are well-informed an expansion of manufacturer liability may lead to increased manufacturer payouts, but it will not generate product withdrawals. The expan-
sion of liability will only shift to manufacturers costs that consumers have otherwise been taking into account.

The expansion of liability will generate product withdrawals, however, where consumers fail fully to appreciate the costs of product-related injuries. It is important here to emphasize that the problem is not simply consumer misunderstanding or inaccuracy in evaluation, but rather systematic consumer underestimation. Although Croley and Hanson suggest the difficulties consumers have in estimating risk, inaccuracy alone cannot explain how an expansion of liability will generate product withdrawals. For example, if consumers overestimate risk, an expansion of liability may generate the reintroduction of products that consumers were not otherwise purchasing.

Moreover, though other scholars have argued that consumers may underestimate the risk of product injuries, Croley and Hanson do not emphasize this point for reasons that are easy to understand. However available in theory, consumer underestimation of risk is inconsistent with what we concur needs to be explained: product withdrawals in the context of increases in manufacturer payouts and declines in the accident rate. Where consumers underestimate risks, the expansion of liability may surely increase manufacturer payouts (leading to product withdrawals), but the payout rate should track the accident rate.

The innovation of the Croley-Hanson analysis is the claim that consumers systematically underestimate the nonpecuniary losses that they suffer from product-related injuries. This claim, along with their assertion that courts have increasingly awarded larger sums for pain and suffering, enables them to purport to explain all of the empirical phenomena at issue. To restate their position, prior to the expansion of liability, consumers underestimated the nonpecuniary losses that they would suffer from product-related injuries. Consumers did not adequately include these losses in their evaluation of the “full” product costs and, as a consequence, overpurchased risky products. With the expansion of liability, manufacturers must now reimburse consumers for their nonpecuniary losses through product liability judgments. Thus, manufacturers must build these losses into the nominal price of products. Both nominal product prices and full product prices, therefore, must increase, generating reductions in product purchases and, in some instances, product withdrawals. The product withdrawals are efficient because they derive from consideration of the full costs of product use. Because courts and juries over time have been

71. Cf. Croley & Hanson, supra note 1, at 61-62.
72. Some analysts suggest they do. See Schwartz, supra note 46, at 379.
74. See Croley & Hanson, supra note 1.
75. See supra note 63.
increasing awards of nonpecuniary damages, insurance premiums increase at a rate greater than the increase in underlying accidents.

Croley and Hanson present no empirical evidence of consumer underestimation of nonpecuniary loss (though I do not fault them since I cannot imagine how to collect such evidence), but there are reasons to question the importance of the phenomenon. Again, Croley and Hanson's point here is not that consumers underestimate product risks, a point made many years ago by Michael Spence. The innovation of their analysis is that consumers, though adequately informed (or at least uninformed in an unbiased way) about product risks, fail to appreciate fully the consequences of those risks as they affect the value of nonpecuniary losses, such as pain and suffering, emotional distress, loss of the enjoyment of life and the like. Thus, to sharpen the Croley-Hanson point, consumers adequately appreciate that they will suffer pain, but systematically underestimates the dollar value of the pain that they will suffer.

How plausible is it that the various empirical phenomena of recent years derive from consumer underestimation of nonpecuniary losses? Indeed, what does it mean for consumers to understand the level of risk but to underestimate the value of pain? Croley and Hanson do not exactly assert that product consumers are excessively stoic or insensitive to pain in comparison to the general population. But to claim that consumers underestimates valuations of pain necessarily implies the existence of some separate and more accurate evaluation.

In essence, Croley and Hanson are claiming that juries, in the awards they pronounce in products liability litigation, more accurately evaluate consumers' pain and suffering than do the victims themselves. That is, according to Croley and Hanson, a consumer may not fully understand the quantum of pain and suffering that an injury will cause, but a jury of peers will better understand it and more accurately evaluate it. This point cannot be refuted, but it does seem reminiscent of the old joke about the psychoanalyst who, upon meeting a joyful person, begs for the opportunity to show the person how deeply unhappy she or he really is.

This theory of Croley and Hanson is novel, but at the least it needs further development. As mentioned above, Croley and Hanson do not relate their assertion of consumer underestimation of pain and suffering to their claim that there is substantial consumer demand for first-party coverage of pain and suffering losses. These two propositions are not strictly inconsistent, but a further specification of the determinants of consumer appreciation of pain and

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76. Croley and Hanson do not tell us whether, in their view, courts and juries have raised the frequency of nonpecuniary damage awards or the quantum per case. As described earlier, they present no support for either proposition. See supra note 63.
77. Spence, supra note 73.
78. Croley & Hanson, supra note 1, at 75.
79. See supra text accompanying note 56.
suffering would be helpful. Similarly, Croley and Hanson do not explain the relationship between consumer underestimation of nonpecuniary loss and consumer use of the litigation system to obtain recoveries for loss. They acknowledge that consumers can obtain recovery for pecuniary losses from first-party sources. Yet, if consumer underestimation of nonpecuniary loss is as serious as Croley and Hanson claim, what has been the motivation for consumer litigation? Put differently, according to both of our analyses, the principal incentive for products liability litigation is the prospect of recovering damages for pain and suffering losses. If consumers do not fully appreciate those losses, why do they bring suit, and how is the jury given an opportunity to correct the consumer misperception?

More generally, the Croley-Hanson analysis of consumer underestimation of pain and suffering seems a very slim reed upon which to build their bold proposal for absolute manufacturer liability. No one claims that there exists an independent metric of pain and suffering loss. But is the mere assumption that a jury of twelve citizen-peers understands a victim's pain better than the victim a plausible grounds for mandating absolute manufacturer liability for product-related injuries? Part III presents evidence regarding a particular consumer product that will allow a firmer evaluation of Croley and Hanson's theory.

2. The First-Party Insurance Externality

Croley and Hanson's second principal argument is that the product withdrawals of modern times stem from internalization of costs previously borne in broad first-party insurance pools, an argument made more extensively in an earlier article by Mr. Hanson and Kyle Logue. According to this argument, prior to the expansion of manufacturer liability, both commercial and individual consumers engaged in the purchase of excessively risky products because their first-party insurance carriers did not or were not able to differentiate insureds in terms of the product risks to which they were exposed.

Again, this point has a theoretical basis and is surely available in the standard economic analysis of liability rules. Unlike the underestimation of pain argument, however, we have a better understanding of the operation of first-party insurance markets and their relationship to third-party markets and can

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80. Croley and Hanson have not addressed my emphasis on the disparity between first- and third-party recovery for pecuniary losses, though it would help them on this point. See supra text accompanying note 20.

81. They claim that the correction of this misperception has generated widespread product and service withdrawals. See, e.g., Croley & Hanson, supra note 1, at 9.


evaluate the point more confidently. There are initial reasons to be skeptical as to its empirical importance. Most importantly, in both commercial and consumer products liability markets, first-party insurers are readily able to combat an externality of this nature. It is well-known that 60% of modern products liability judgments stem from workplace accidents.\footnote{AAI/AIA JOINT INDUSTRY STUDY, PRODUCT LIABILITY CLAIMS CLOSED IN 1985 (1986).} Can a first-party workers' compensation insurance externality explain the withdrawal of machine products for insurance reasons evident in recent years?\footnote{Cf Priest, Insurance Crisis, supra note 2, at 1584 (arguing that enterprise liability inhibits first-party insurers from aggregating small manufacturers into efficient risk-pools).} The externality explanation is largely implausible since it has been well established since the first extension of products liability law to workplace accidents that first-party workers' compensation carriers possess subrogation rights with respect to all products liability judgments. Subrogation eliminates any first-party insurance externality.\footnote{That is, the workers' compensation carrier recovers the full amount paid to the worker, typically by means of a lien against the products liability judgment itself.} Thus, the first-party insurance externality hypothesis would suggest little reason for withdrawals of industrial products.

Is the first-party insurance externality point more plausible in the context of consumer injuries? The question is an empirical one, but there is little reason to expect greater plausibility. First-party carriers such as Blue Cross-Blue Shield, as well as smaller carriers and HMOs, routinely staff offices to pursue subrogation claims against tortfeasors wherever available. These efforts will of course be more successful where the injured claimant independently decides to file suit against a product manufacturer, although again these staffs are routinely charged to investigate the potential of third-party actions whether suit has been brought or not. Without more information, one cannot evaluate the empirical significance of the externality in the aggregate, though the issue is surely worth further study.

I do not wish to suggest, however, that the analytical and empirical implausibility of the Croley-Hanson approach is reason enough to reject it. Part III attempts to evaluate the Croley-Hanson theory in a different way. It presents the best information available on developments concerning a single consumer product greatly affected by the expansion of liability in recent years. This careful look may provide a more effective perspective for evaluating the plausibility of our competing theories.
III. The Theories Compared: The Expansion of Tort Law and General Aviation

In Part II, I suggested that the Croley-Hanson analysis of the expansion of liability and the reasons for the widespread product withdrawals of the last few years were based upon assumptions that were largely implausible. Croley and Hanson present no coherent description of consumer demand for nonpecuniary loss insurance coverage. It is questionable to assert that juries understand and evaluate pain and suffering more accurately than does the actual victim of the pain. Finally, it is unlikely that a first-party insurance externality of sufficient magnitude could be generated to explain the widespread product withdrawals since first-party insurers actively battle against such externalities. For these reasons, it is my belief that Croley and Hanson's explanation of recent phenomena is unconvincing and that their recommendation for an expansion of liability to absolute manufacturer liability is unpersuasive.

This Part, however, attempts to evaluate their theory differently by examining a prominent consumer product heavily affected in recent years by the expansion of liability: general aviation. Although the evidence remains subject to interpretation, the focus on a specific product may better enable a comparison of our opposing explanations.

Figure 1 presents the most detailed time series data available comparing accidents to liability payouts for a single product. It compares changes over time for the general aviation industry both in the number of fatal accidents and in the fatal accident rate per 100,000 flying hours to changes in liability claims payouts for all manufacturers in the industry. These data are available for this industry because regulations require that the Federal Aviation Administration investigate and publish information about all aviation accidents. The General Aviation Manufacturers' Association provided the liability cost data.

General aviation is an industry that has been hit hard by the expansion of liability. In 1986, it was reported that liability insurance costs added $80,000 to the price of each Beech aircraft and $75,000 to each Piper aircraft. The industry has claimed that the impact of these liability costs has led to the decline in U.S. production from 17,048 planes in 1979 to 1,143 planes in 1988, thus providing a vivid example of the phenomenon that Croley and Hanson and I are attempting to explain.

87. General aviation refers to all non-commercial planes.
88. GENERAL AVIATION MANUFACTURERS ASS'N, GENERAL AVIATION STATISTICAL HANDBOOK (1989) [hereinafter HANDBOOK].
90. HANDBOOK, supra note 88, at 4.
The line beginning at the left bottom represents changes in the rate of fatal accidents for general aviation since 1946. It illustrates that the rate of fatalities has been declining steadily over the past 40 years. General aviation manufacturers were first subjected to the strict liability standard in 1963,\(^91\) though there

remain questions as to how serious the expansion of liability was prior to the broader adoption of strict products liability by states during the early 1970s. The line on the bottom right of the Figure represents changes in the absolute number of deaths from general aviation accidents. It shows a close correspondence to the accident rate per 100,000 flying hours, suggesting that the accident rate figure is not distorted by unshown changes in the flight volume. Finally, the line ascending on the right shows changes in liability claims payouts since 1977, the first year for which the liability data are available. (Again, all lines are measured in terms of changes from the base year amount.) These lines show that since 1977, liability claims payouts have been increasing at a rate totally disproportionate to changes in the number of underlying accidents and in the underlying accident rate. This relationship between liability payouts and accidents appears typical of other areas of modern tort law as well, such as medical malpractice and products liability.92

How can we explain these data? Croley and Hanson agree with me that claims payouts have increased because of expanded liability. Why, however, have product sales declined? According to Croley and Hanson's first proposition, sales in general aviation have dwindled because over the last two decades pilots have consistently underestimated the dollar value of the pain they would suffer from a crash. Juries have evaluated this pain more accurately. The expansion of manufacturer liability internalizes the value of pain in the product price. Is this explanation plausible? Again, it cannot be definitively refuted, but it seems peculiar that a pilot would so underestimate the pain from an airplane crash that the internalization of the value of the pain would generate a decline in sales from 17,000 to 1,000 in less than a decade.

The Croley-Hanson/Hanson-Logue first-party insurance externality proposition, however, is not so plausible. There is no first-party insurance externality for general aviation. It is a standard provision of basic life insurance policies that pilots are excluded from coverage. This exclusion creates a separate life insurance market for general aviation pilots, subject to different premiums reflecting the different risk of death. Thus, for this industry there can be no first-party insurance externality to account for the decline in product sales so evident in Figure 1.

My theory suggests a different explanation for the observed decline. In a stable legal regime, liability payouts would track the number of accidents. Increases in liability payouts can vastly exceed changes in the underlying accident rate, as shown in Figure 1, chiefly where courts expand liability to new contexts. In modern products liability, including general aviation liability, courts have expanded liability either explicitly on grounds of risk-spreading or, less explicitly, beyond the point of cost-effective manufacturer prevention. Either

way, the expansion of liability has shifted the insurance obligation from first-party to third-party carriers. This expansion has led to increases in the full product price in the general aviation market as well as in other commercial and consumer markets. Because of the disadvantages of third-party relative to first-party insurance, the increase in price—$75,000 to $80,000 in the cases of Piper and Beech—has not generated equivalent benefits to consumers. Thus, the additional insurance for nonpecuniary loss built into the third-party damage judgment reduces the value of the product to potential purchasers, rather than increasing value as proposed by Croley and Hanson. Because the expansion of liability compels purchasers to pay for nonpecuniary loss insurance in the price of the product, the value of the purchase declines and product sales decline.

IV. The Croley-Hanson Recommendation of Absolute Liability Briefly Examined

This is not the occasion to be excessively critical of what appears to be an ambitious and developing research project for Croley and Hanson. Nevertheless, the authors should be aware that, although they seem emphatic in recommending the adoption of absolute manufacturer liability, it is not evident that their argument supports such a recommendation. The economic literature from which their analysis derives routinely presumes that strict or absolute manufacturer liability is never truly absolute as Croley and Hanson define it, but will be attended by defenses that place burdens on consumers to encourage them to take actions to prevent product-related accidents when they can do so cost-effectively. Indeed, the economic literature is unanimous on this point.

The Croley-Hanson analytic emphasis on activity level effects and their endorsement of the standard analysis of care level effects would appear to place Croley and Hanson firmly within this basic economic approach, according to which the full set of defenses to consumer actions must be available for optimal accident avoidance. Put differently, Croley and Hanson have not yet begun the work either to explain and justify why no defenses should be available to manufacturers, or to develop the set of defenses in their recommended regime that could fulfill the economic imperative of creating optimal incentives for

93. See supra note 89 and accompanying text.
94. See Steven P. Croley & Jon D. Hanson, Insuring Against Nonpecuniary Losses (unpublished manuscript, cited in Croley & Hanson, supra note 1, at 59 n.197); Steven P. Croley & Jon D. Hanson, Understanding Products Liability (unpublished manuscript, cited in Croley & Hanson, supra note 1, at 3 n. 1); Hanson & Logue, supra note 82.
95. See, e.g., Croley & Hanson, supra note 1, at 8, 111.
96. Id. at 3 n.1.
97. See, e.g., LANDES & POSNER, supra note 65; POLINSKY, supra note 67; Shavell, supra note 65. For an expression of some concern that this literature has proceeded oblivious to actual law, see Priest, Internalizing Costs, supra note 6, at 24-25.
consumer accident avoidance. Without this work, the implications of their recommendations of absolute manufacturer liability\textsuperscript{98} cannot adequately be evaluated.

Moreover, though it remains possible that the Croley-Hanson hypothesis about consumer underestimation of the value of pain or the existence of the first-party insurance externality best explains the withdrawal of products in recent years, it would be helpful to have some further empirical demonstration of the plausibility of their approach. The great virtue of the economic approach to the study of the law is that it attempts to isolate data that bear on conflicting theories to allow a discerning reader to judge between them. I encourage Croley and Hanson to turn their prodigious energies to the discovery of such data. For the moment, I remain convinced that the expansion of liability and the consequent withdrawal of products and shrinking of insurance markets, far from enhancing social welfare, has reduced it. To this point, I remain concerned that the absolute enterprise liability regime proposed by Croley and Hanson would harm society the more.

\textsuperscript{98} See Croley & Hanson, supra note 1, at 111.