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The Insubstantiality of the “Substantial Factor” Test for Causation

Joseph Sanders
Michael D. Green
William C. Powers, Jr.*

“Over the years, courts . . . used the substantial factor test to do an increasing variety of things it was never intended to do and for which it is not appropriate. As a result, the test now creates unnecessary confusion in the law and has outlived its usefulness.”¹

I. FOR DAVID

We are pleased and enthusiastic about participating in this effort to honor David Fischer and his remarkable career. Collectively, we have been consumers of his scholarship, colleagues who share an abiding interest in tort law, co-authors who have worked together with him on a Products Liability casebook,² and participants in Restatement projects³ for which David has made contributions too numerous to catalogue.

David’s scholarship is most remarkable for the difficult problems he chooses to confront. His intellectual curiosity leads him into legal thickets that others have skirted. His work on the knotty and puzzling problems at the edge of causation – preemption, overdetermined outcomes, duplicated harm, and multiple omissions – takes on some of the most intellectually challenging areas that we confront.⁴ David’s work is painstaking, rigorous, thoughtful,

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1. David A. Fischer, *Insufficient Causes*, 94 KY. L.J. 277, 277 (2005) (footnote omitted).

2. One of us (William C. Powers, Jr.) co-authored the first two editions of the casebook with David. Two of us (Michael D. Green and Joseph Sanders) joined the other two in the next two editions of that casebook.

3. Two of us (Green and Powers) were co-Reporters for those Restatement projects and the other (Sanders) was an active participant in the Members Consultative Group for one of those projects.

4. See Fischer, *supra* note 1; David A. Fischer, *Successive Causes and the Enigma of Duplicated Harm*, 66 TENN. L. REV. 1127 (1999); David A. Fischer, *Proportional Liability: Statistical Evidence and the Probability Paradox*, 46 VAND. L.

persuasive, and helpful. He is also unflaggingly courteous and respectful in his work, even to those with whom he disagrees.

Having had the opportunity to work directly with David on several editions of a Products Liability casebook for which he is originally responsible, we can affirm his thoughtfulness and carefulness in conceptualizing, developing, and organizing a text. Collaboration has been a pleasure, and David is always willing to take on more than his share, both in revising material and in handling the always burdensome logistics. Every collaborative project (and law school) needs good institutional citizens. David is the best.

Finally, we applaud David's contributions to the Third Restatement of Torts project on Liability for Physical and Emotional Harm.⁵ David has been among the most active participants on the Members Consultative Group. His scholarship on causation has been invaluable. Citations to his published work are liberally scattered throughout the Reporters' Notes. In particular, his work has revealed the wide-ranging impact "loss of chance" issues might have on other doctrines that previously were thought to be unrelated. He cautioned against failing to cabin this impact, and then provided guidance for appropriate mechanisms for imposing limits.⁶ We have, on more than one occasion, sought and received his advice on a difficult issue. David is unflaggingly positive and supportive; he never feels the need for self-aggrandizement or self-promotion and always makes his considerable contributions in a graceful and unassuming manner.

Because David's focus in his scholarly work has been on factual causation, and because he has contributed so much to our understanding of that subject in the Third Restatement, we have chosen a topic in that area for this essay. The essay addresses factual cause in toxic substances cases where the evidence of exposure is meager.⁷ We're not sure that David will agree with all of what we say, but we hope that he will be honored by our choice of topic.

REV. 1201 (1993); David A. Fischer, *Causation in Fact in Omission Cases*, 1992 UTAH L. REV. 1335 [hereinafter Fischer, *Omission Cases*].

5. We use here the current title of this Restatement project. We cite, however, to the title in the Proposed Final Draft (which is now final) when we refer to that source, which omits reference to emotional harm. The scope of that Restatement project was expanded after the Proposed Final Draft to include two Chapters, one of which addresses emotional harm.

6. See David A. Fischer, *Tort Recovery for Loss of a Chance*, 36 WAKE FOREST L. REV. 605 (2001).

7. Exposure is one of the elements in proof of causation in toxic substances cases. See, e.g., RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 28 cmt. c(2) (Proposed Final Draft No. 1, 2005).

II. CAUSAL UNCERTAINTY IN ASBESTOS: DEFENDANTS NOT DISEASE

The asbestos litigation is unique in American tort law. In a liability world increasingly occupied by mass torts, it is still "the mass tort that dwarfs all others."⁸ Since the first successful asbestos case, *Borel v. Fibreboard Paper Products Corp.*,⁹ hundreds of thousands of personal injury claims have been brought, billions of dollars have been paid in claims and litigation costs, and numerous asbestos manufacturers, including Fortune 500 companies, have been driven into bankruptcy.¹⁰ Although there is disagreement about where we are in the claims process, almost everyone agrees that the end of the asbestos cases is not in sight.¹¹

Throughout this long history, the asbestos litigation has presented a variety of fascinating causal questions. Many plaintiffs have benefitted (if that is the right word for it) from the fact that asbestos causes what are commonly called "signature diseases."¹² Asbestosis and mesothelioma are diseases that are unique or nearly unique to those who have inhaled asbestos fibers.¹³ In other ways, however, proving causation in asbestos cases can be a daunting task. Many victims of asbestos-related diseases confront two related causal problems. First, due to the long latency period between exposure and manife-

8. Deborah R. Hensler & Mark A. Peterson, *Understanding Mass Personal Injury Litigation: A Socio-legal Analysis*, 59 BROOK. L. REV. 961, 1004 (1993).

9. 493 F.2d 1076 (5th Cir. 1973).

10. See 3 DAVID L. FAIGMAN, MICHAEL J. SAKS, EDWARD K. CHENG & JOSEPH SANDERS, MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY §§ 26:1 (2007-08 ed.); STEPHEN J. CARROLL ET AL., ASBESTOS LITIGATION (2005).

11. Predictions concerning the number of asbestos claims yet to be filed range from half a million to over two million. See James L. Stengel, *The Asbestos End-Game*, 62 N.Y.U. ANN. SURV. AM. L. 223, 226 (2006); Deborah R. Hensler, *Asbestos Litigation in the United States: Triumph and Failure of the Civil Justice System*, 12 CONN. INS. L.J. 255 (2006).

12. The technical term is "pathognomonic." See Michael D. Green et al., *Reference Guide on Epidemiology*, in FED. JUDICIAL CTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 333, 394 (2d ed. 2000).

13. There is debate in the scientific literature about whether some modest proportion of mesothelioma occurs without asbestos exposure. Compare J.T. Peterson, S.D. Greenberg & P.A. Buffer, *Non-Asbestos-Related Malignant Mesothelioma: A Review*, 54 CANCER 951 (1984), with E.J. Mark & T. Yokoi, *Absence of Evidence for a Significant Background Incidence of Diffuse Malignant Mesothelioma Apart from Asbestos Exposure*, 643 ANNALS N.Y. ACAD. SCI. 196 (1991). Another illness associated with asbestos is lung cancer. There is general agreement that inhalation of asbestos fibers increases the probability one will develop this disease. However, there are other causes of this disease, most importantly tobacco use. See 3 FAIGMAN ET AL., *supra* note 10, §§ 26:25, 26:29.

station for the most serious asbestos-related diseases,¹⁴ plaintiffs often cannot identify specific defendants to whose products they were exposed. Second, even when the plaintiff does know the identity of some of the defendants, there is often no way to determine with any precision the level of exposure to each defendant's product and its contribution to the plaintiff's injury.¹⁵ Depending on the biology of disease development, the extent of exposure, and when it occurred, exposure to a given defendant's product may have: 1) played no causal role in the plaintiff's disease; 2) contributed, along with exposure to other defendants' asbestos, to a dose sufficient to cause the plaintiff's disease (a "threshold dose"); 3) contributed, along with exposure to other defendants' asbestos, to a dose more than sufficient to cause the plaintiff's disease; 4) caused the disease independently of exposure to any other asbestos products; or 5) caused some marginally greater severity of plaintiff's disease.¹⁶

Beginning with *Borel*, courts have attempted to deal with the causal uncertainty that exists, especially when the extent of exposure to a specific defendant's asbestos is uncertain, modest, or very small.¹⁷ More recently, after some thirty years of asbestos litigation and decades of courts struggling with causal questions raised in other toxic substances cases, the *Restatement (Third) of Torts: Liability for Physical and Emotional Harm* has revisited the issue of causation. The Third Restatement, which each of us has been involved with, makes substantial changes to the causation provisions in the Second Restatement.

14. The average latency period for mesothelioma is on the order of thirty to forty years. 3 FAIGMAN ET AL., *supra* note 10, § 26:24. The lung cancer latency period is at least fifteen years and often more than twenty years after exposure. *Id.* § 26:25. Latency itself may present a problem for some plaintiffs against some defendants. If a plaintiff has a long history of asbestos exposure, and if exposure to the defendant's product occurred shortly before the plaintiff was diagnosed with mesothelioma, the short time span between this exposure and the illness tends to rule out the defendant's product as the cause of the plaintiff's injury. *See, e.g.*, ASS'N OF BRITISH INSURERS, GUIDELINES FOR APPORTIONING AND HANDLING EMPLOYERS' LIABILITY MESOTHELIOMA CLAIMS 9 (2003) (excluding exposures within 10 years of diagnosis of mesothelioma as contributing to its risk, presumably on the ground that those exposures could not have caused a disease whose minimum latency period is considerably greater than 10 years).

15. This is an even greater problem with respect to non-signature diseases where other exposures, e.g. cigarette smoke, may be the cause of the plaintiff's injury.

16. *See* Michael D. Green, *A Future for Asbestos Apportionment?*, 12 CONN. INS. L.J. 315 (2006).

17. Several defendants in *Borel* claimed that exposure to their products occurred too late to have caused decedent's disease. The court rejected that claim, stating that those later exposures could have contributed to the severity of the disease and therefore constituted an "additional and separate injury." *Borel v. Fibreboard Paper Prods. Corp.*, 493 F.2d 1076, 1094 (5th Cir. 1973).

III. SUBSTANTIAL FACTORS AND SMALL EXPOSURES

Against this backdrop, two recent state supreme court cases in Pennsylvania and Texas that confront the question of small or modest exposure to asbestos products provide an opportunity to assess the causal issues posed by such exposures. Both *Gregg v. V-J Auto Parts, Inc.*¹⁸ and *Borg-Warner Corp. v. Flores*¹⁹ rely on a substantial factor analysis to resolve the difficult causal question presented. We compare *Gregg* and *Flores* with two other cases, *Lohrmann v. Pittsburgh Corning Corp.*²⁰ and *Rutherford v. Owens-Illinois*,²¹ that have addressed similar issues and have also relied on the concept of "substantial factor," contained in the Second Restatement of Torts. We argue, not surprisingly, that the best way to understand and resolve the complex causal questions posed in these cases is to employ the but-for test of causation as it is formulated in the Third Restatement of Torts. Although we are particular to conceptualizing causation as a but-for or necessary condition, we remain acutely aware of the difficulties of proof in toxic substances cases, including asbestos. We do, however, prefer confronting those difficulties head on rather than obscuring them with a substantial factor approach.

Typically, plaintiffs sue every known entity to whose asbestos product they may have been exposed, and, during the course of discovery, some defendants may be dismissed by way of summary judgment or directed verdict if the plaintiff's contact with their product is too tenuous. Courts have been forced to develop a set of tests for judging which asbestos defendants are entitled to dismissal on this basis. The test developed in *Lohrmann*²² is one popular solution to this problem. The trial court in *Lohrmann* granted directed verdicts to three defendants because there was insufficient evidence that plaintiffs came in contact with their products. The appellate court affirmed. It rejected the argument that if the plaintiff can prove that the defendant's asbestos containing product was at the workplace while the plaintiff was there, a jury question has been created as to whether the product was a cause of the plaintiff's disease. Instead, it concluded that "[t]o support a reasonable inference of substantial causation from circumstantial evidence, there must be evidence of exposure to a specific product on a regular basis over some extended period of time in proximity to where the plaintiff actually worked."²³ Some form of this test has been adopted by many courts.²⁴

18. 943 A.2d 216 (Pa. 2007).

19. 232 S.W.3d 765 (Tex. 2007).

20. 782 F.2d 1156 (4th Cir. 1986).

21. 941 P.2d 1203 (Cal. 1997).

22. 782 F.2d 1156 (4th Cir. 1986).

23. *Lohrmann*, 782 F.2d at 1162-63.

24. See, e.g., *Shetterly v. Raymark Indus., Inc.*, 117 F.3d 776 (4th Cir. 1997); *Slaughter v. S. Talc Co.*, 949 F.2d 167 (5th Cir. 1991); *Tragarz v. Keene Corp.*, 980 F.2d 411 (7th Cir. 1992); *Jackson v. Anchor Packing Co.*, 994 F.2d 1295 (8th Cir. 1993). A popular variation is the "fiber drift" theory, employed by plaintiffs who

The *Lohrmann* and similar tests have sometimes been used to prove exposure to asbestos in general and other times to prove exposure to a particular defendant's product. In nearly all of these cases, the courts conceive of the test as an instantiation of the Restatement (Second) of Torts Section 431's substantial factor test of causation.²⁵

In *Gregg v. V-J Auto Parts, Inc.*, the Pennsylvania Supreme Court relied on the *Lohrmann* "frequency, regularity and proximity" test in a case brought by the survivors of a mesothelioma victim against an auto parts store where he had purchased asbestos-containing brake pads which he installed on his automobile.²⁶ Twice in the *Gregg* litigation the trial court entered summary judgment for the defendant because the evidence of exposure to the defendant's products was not sufficient to satisfy the plaintiff's burden of production. That is, employing the *Lohrmann* test, the plaintiff could not show that decedent's exposure to the defendant's product was a substantial factor in causing the illness. Twice the appellate court reversed the trial court's granting of a summary judgment.

The decedent's exposure history is indeed quite sketchy. At one point, the plaintiff's expert averred that Mr. Gregg's illness was the result of his forty-year occupational exposure to asbestos, not to non-occupational expo-

have not handled asbestos-containing material directly but have worked in places where asbestos is present. Their argument is that if a defendant's asbestos products were used in a plant, all workers were exposed because asbestos fibers drift and are recirculated throughout the factory. Plaintiffs typically turn to this theory when they cannot meet the *Lohrmann* test. See, e.g., *Robertson v. Allied Signal, Inc.*, 914 F.2d 360 (3d Cir. 1990); *Thacker v. UNR Indus., Inc.*, 603 N.E.2d 449 (Ill. 1992).

As the court in *Eagle-Picher Industries, Inc. v. Balbos* notes, the particular application of the test has varied depending upon the plaintiff's injury. 578 A.2d 228, 245 (Md. Ct. Spec. App. 1990), *aff'd in part, rev'd in part on other grounds*, 604 A.2d 445 (Md. 1992). The *Balbos* court was confronted with a plaintiff suffering from mesothelioma. It observed that, unlike asbestosis, long term exposure is not a necessity for developing mesothelioma and, therefore, the plaintiffs "were not required to show that the decedents were exposed to the asbestos products frequently or with any degree of regularity." *Id.* at 244. See generally Brian M. DiMasi, Comment, *The Threshold Level of Proof of Asbestos Causation: The "Frequency, Regularity and Proximity Test" and a Modified Summers v. Tice Theory of Burden-Shifting*, 24 CAP. U. L. REV. 735 (1995).

25. The black letter of Section 431 provides: "The actor's negligent conduct is a legal cause of harm to another if (a) his conduct is a substantial factor in bringing about the harm . . ." RESTATEMENT (SECOND) OF TORTS § 431 (1965). While most courts employ the *Lohrmann* test to inform whether a defendant's asbestos is a substantial factor in plaintiff's disease, others use it merely as a surrogate for determining whether plaintiff has been exposed to *any* asbestos from defendant's products, which is sufficient evidence to satisfy plaintiff's burden of production. This is particularly a problem at large job sites. See *Thacker*, 603 N.E.2d 449. At various points in its opinion, the *Gregg* court seems to be using the *Lohrmann* test in both of these ways.

26. *Gregg*, 943 A.2d 216, at 217-18, 221-22.

tures such as changing brake pads.²⁷ Subsequently, he amended his view, claiming the injury was due to both occupational and non-occupational exposures.²⁸ That revised view occurred after plaintiff was unable to prove any occupational exposure. Ultimately, the plaintiff sought to amend the pleadings to remove any allegation of occupational exposure as a source of the illness.²⁹ Even the level of exposure to the brake products sold by the defendant is uncertain. Some of the decedent's survivors did not have a clear memory of whether the products he bought from the defendant contained asbestos and their recollection of exactly how often he bought products from this dealer was also imprecise.³⁰ The best plaintiff's witness "described Mr. Gregg, on two or three occasions, breathing dust created when he 'scuffed' asbestos-containing brake pads obtained from [the defendant] with sandpaper."³¹

The issue on appeal after the second appellate court ruling was whether the *Lohrmann* test is applicable when the plaintiff has direct evidence of exposure or whether, as the appellate court held, the test is only applicable if the plaintiff must rely exclusively on circumstantial evidence.³² The Pennsylvania Supreme Court concluded that even when the plaintiff has direct evidence of exposure to the defendant's product, the trial court may consider the frequency, regularity, and proximity of the decedent's exposure in determining whether a fact question exists on the question of causation. Accordingly, it vacated the appellate court decision and remanded the case. In doing so, it explicitly authorized the trial court to keep a case from the jury if the evidence does not demonstrate that the defendant's product was a substantial factor in causing the plaintiff's injury.³³ In one particularly instructive passage, responding to the fact that the plaintiff's expert asserted that asbestos

27. *Id.* at 218.

28. *Id.*

29. *Id.* at 224. Apparently, the plaintiff was unable to point to any particular source of occupational exposure. During his lifetime, the decedent worked as a cable splicer and lineman with telecommunications companies and as a gas station attendant for four years. He also served a three year stint in the Navy. *Id.* at 217. As we discuss below, whether in fact there was a substantial occupational exposure might affect the status of the brake pad exposure as a substantial factor.

These expert witness flip-flops caused the Pennsylvania Supreme Court to note that the court's job is made harder when, as here, there is "a willingness on the part of some experts to offer opinions that are not fairly grounded in a reasonable belief concerning the underlying facts and/or opinions that are not couched within accepted scientific methodology." *Id.* at 226.

30. *Id.* at 219-20.

31. *Id.* at 225.

32. *Id.* at 220-22. The distinction contemplated by the court is whether there is evidence of the plaintiff inhaling dust created by the asbestos product in question on the one hand or whether the evidence is limited to plaintiff's physical proximity to asbestos products of the defendant, on the other. *Id.* at 220.

33. *Id.* at 226-27.

from the brake jobs contributed to the decedent's mesothelioma, the court drew the following analogy:

“Just because a hired expert makes a legal conclusion does not mean that a trial judge has to adopt it if it is not supported by the record and is devoid of common sense. For example, [the plaintiff's liability expert] used the phrase, ‘Each and every exposure to asbestos has been a *substantial* contributing factor to the abnormalities noted.’ However, suppose an expert said that if one took a bucket of water and dumped it into the ocean, that was a ‘substantial contributing factor’ to the size of the ocean. [The expert's] statement saying every breath is a ‘substantial contributing factor’ is not accurate. If someone walks past a mechanic changing brakes, he or she is exposed to asbestos. If that person worked for a factory making lagging, it can hardly be said that one whiff of the asbestos from the brakes is a ‘substantial factor’ in causing disease.”³⁴

If the previous trial court determinations are any guide, presumably this case will conclude with summary judgment being entered on behalf of the defendant.

The second recent case is *Borg-Warner v. Flores*,³⁵ decided in the fall of 2007 by the Texas Supreme Court. The facts in *Flores* also involve exposure to asbestos from brake pads. Mr. Flores worked as a brake mechanic in the automotive department at Sears in Corpus Christi, Texas, from 1966 until his retirement in 2001. During that time, he handled several brands of brake pads, including those of Borg-Warner. He used Borg-Warner pads from 1972 to 1975 on five to seven of the roughly twenty brake jobs he performed each week. The pads contained chrysotile asbestos fibers.³⁶ The fibers comprised between 7 and 28% of the pad's weight, depending on the type of pad. Mr. Flores's job involved grinding the pads so that they would not squeal. This grinding generated clouds of dust that he inhaled while working in an eight

34. *Id.* at 223 (quoting *Summers v. Certaineed Corp.*, 886 A.2d 240, 244 (Pa. Super. Ct. 2005)) (alterations in original).

We note that the court's analogy to the size of the ocean invokes a continuous outcome rather than the dichotomous outcome of contracting mesothelioma. We take issue with the court's “one whiff” assertion *infra* text accompanying note 89.

35. 232 S.W.3d 765 (Tex. 2007).

36. Section 4 of the Asbestos Information Act of 1988 defines asbestos as chrysotile, amosite, or crocidolite, or in fibrous form, tremolite, anthophyllite, or actinolite. Pub. L. No. 100-577, 102 Stat. 2901 (codified as amended at 15 U.S.C. § 2607 (2006)). Chrysotile is “the most abundant type of asbestos” and “accounts for more than 90% of the world's asbestos production.” Lee S. Siegel, *As the Asbestos Crumbles: A Look at New Evidentiary Issues in Asbestos-Related Property Damage Litigations*, 20 HOFSTRA L. REV. 1139, 1149 (1992).

by ten foot room. Flores sued the defendant and others alleging their products caused his illness.³⁷

One of Mr. Flores's expert witnesses testified that Mr. Flores suffered from interstitial lung disease and diagnosed him with asbestosis based on his work as a brake mechanic coupled with an adequate latency period.³⁸ The jury found that Mr. Flores sustained an asbestos-related injury, that the defendant's negligence (along with the negligence of three settling defendants) proximately caused his injury, and that the brake products of each of the defendants had marketing, manufacturing, and design defects. The jury apportioned 37% of the liability to Borg-Warner³⁹ and 21% each to the three other

37. *Flores*, 232 S.W.3d at 766.

38. *Id.* No test was performed on Mr. Flores's lung tissue to quantify the level of asbestos fibers in his lungs. *Id.* at 766 n.5. His expert did agree that asbestos exposure is but one of a number of causes of interstitial lung disease. *Id.* at 766. The defendant's expert testified that, in her opinion, Mr. Flores did not have asbestosis. *Id.* at 768. Mr. Flores also suffered from mild obstructive lung disease, apparently unrelated to his asbestos exposure. *Id.* at 767. Mr. Flores's cardiologist reported that he had a fifty-pack-per-year smoking history. *Id.* at 768. The court provided no further information, as the jury found in favor of the plaintiff, and it does not appear that defendant raised the issue on appeal. *Id.* at 769 n.11.

There is even less discussion of this issue in the *Lohrmann* opinion, discussed below. The fact that the jury in *Lohrmann* found in favor of four defendants who were not granted a directed verdict suggests that the jury may have believed he was not suffering from asbestosis. Like Mr. Flores, Mr. Lohrmann was a life-long smoker. See *Lohrmann v. Pittsburg Coming Corp.*, 782 F.2d 1156, 1158 (4th Cir. 1986). On the difficulty of making asbestosis diagnoses based solely on clinical criteria when the individual has been a heavy smoker, see 3 FAIGMAN, ET AL., *supra* note 10, § 26:26. Today, a number of states, including Texas, have passed medical criteria acts that require plaintiffs to provide more than a clinical assessment before they may proceed with an asbestosis claim. See Joseph Sanders, *Medical Criteria Acts: State Statutory Attempts to Control the Asbestos Litigation*, 38 SW. U. L. REV. (forthcoming 2008).

39. The Texas Supreme Court said that "[t]he jury apportioned to Borg-Warner 37% of the causation." *Flores*, 232 S.W.3d at 768. This is not quite correct but neither is it clearly wrong. Section 33.003 of the Texas Comparative Responsibility Statute states that in determining percentages of responsibility:

(a) The trier of fact, as to each cause of action asserted, shall determine the percentage of responsibility, stated in whole numbers, for the following persons with respect to each person's causing or contributing to cause in any way the harm for which recovery of damages is sought, whether by negligent act or omission, by any defective or unreasonably dangerous product, by other conduct or activity that violates an applicable legal standard, or by any combination of these:

- (1) each claimant;
- (2) each defendant;
- (3) each settling person; and
- (4) each responsible third party who has been designated under Section 33.004.

defendants.⁴⁰ It assessed a total of \$114,000 in compensatory damages and \$55,000 in exemplary damages against Borg-Warner. The appellate court

TEX. CIV. PRAC. & REM. CODE ANN. § 33.003 (Vernon 2003).

Although there is not much Texas case law on point, the statute might be understood to adopt a position that makes factual causal contribution an important but not exclusive consideration in assessing percentages of responsibility. The Texas Supreme Court has long been attracted to the concept of “comparative causation.” See *Gen. Motors Corp. v. Hopkins*, 548 S.W.2d 344 (Tex. 1977) (adopting comparative causation in a case involving product misuse so that the defendant only paid the share of harm that was caused by product defect), *overruled by* *Duncan v. Cessna Aircraft Co.*, 665 S.W.2d 414 (Tex. 1984) (adopting comparative causation for apportioning between a comparatively negligent plaintiff and a strictly liable product manufacturer because it is conceptually more precise when a party can be liable without fault).

We do not believe that factual causation, at least when understood as meaning the tortious conduct is a necessary condition (but-for cause) for the outcome, is an appropriate basis for comparative assessment. See Green, *supra* note 16, at 326 & n.44. Contribution to the risk of disease, on the other hand, sure is. See Michael D. Green, *Some Second Thoughts About Asbestos Apportionment*, 38 SW. U. L. REV. (forthcoming 2008).

40. There is no explanation in the court’s opinion about how to reconcile the jury’s apportioning 37% of the liability to Borg-Warner in light of the fact that less than 10% of plaintiff’s exposure to asbestos was to Borg-Warner’s. Our back-of-the-envelope estimate of the proportion of Borg-Warner asbestos to which Mr. Flores was exposed, based on 25%-35% of the brake jobs for three years during a thirty-five to thirty-seven year career (the Supreme Court stated he worked at one employer for thirty-five years, but the court of appeals opinion says he worked on brakes for thirty-seven years) is approximately 2%-3%. That estimate assumes Borg-Warner’s brake pads produce the same amount of friable fibers when grinded as other manufacturers’. The estimate probably understates the true amount since, beginning in the late 1970s, improved industrial hygiene practices were begun and in the mid-1980s asbestos was removed from many products, including brake pads; Flores was exposed to Borg-Warner products in the early 1970s. See Karen S. Creely et al., *Trends in Inhalation Exposure – A Review of the Data in the Published Scientific Literature*, 51 ANNALS OCCUPATIONAL HYGIENE 665, 670 (2007); Dennis J. Paustenbach et al., *An Evaluation of the Historical Exposures of Mechanics to Asbestos in Brake Dust*, 18 APPLIED OCCUPATIONAL & ENVTL. HYGIENE 786, 804 (2003).

In the court of appeals, Borg-Warner challenged the jury’s apportionment of 37% of liability to it, contending that, based on the evidence, it was only between 4.5 and 6.25% responsible. *Borg-Warner Corp. v. Flores*, 153 S.W.3d 209, 218 (Tex. Ct. App. 2004). The court did not provide any explanation of how Borg-Warner came up with its estimate of its share of comparative responsibility.

The transcript of final argument in *Flores*, which was kindly provided to us by Brent Rosenthal, counsel for plaintiff on appeal, does offer an explanation. Based on Mr. Flores’s testimony about the number of brake jobs he did each year, the proportion that involved Borg-Warner’s products during the years they were used, and the number of years Flores did brake jobs, counsel for defendant presented a more refined calculation of Borg-Warner’s proportional contribution to the Flores’s total asbestos exposure that produced the 4.5 to 6.25% figures. Transcript of Trial at 64-

affirmed,⁴¹ but the Texas Supreme Court reversed and entered judgment for Borg-Warner.⁴²

The *Flores* court refused to adopt the *Lohrmann* test, not because frequency, regularity, and proximity are irrelevant to the causal question, but because it believed a substantial factor determination involves more than these three considerations. Specifically, there must be a separate analysis of dosage.⁴³ The court referenced studies stating that asbestosis is generally the result of substantial exposure over time, and it argued that the record "reveals nothing about how much asbestos Flores might have inhaled."⁴⁴

At the heart of the court's analysis is the following statement:

[A]bsent any evidence of dose, the jury could not evaluate the quantity of respirable asbestos to which Flores might have been exposed or whether those amounts were sufficient to cause asbestosis. Nor did Flores introduce evidence regarding what percentage of that indeterminate amount may have originated in Borg-Warner products. We do not know the asbestos content of other brands of brake pads or how much of Flores's exposure came from grinding new pads as opposed to blowing out old ones Thus, while some respirable fibers may be released upon grinding some brake pads, the sparse record here contains no evidence of the approximate quantum of Borg-Warner fibers to which Flores was exposed, and whether this sufficiently contributed to the aggregate dose of asbestos Flores inhaled, such that it could be considered a substantial factor in causing his asbestosis.⁴⁵

The court expressly states that it is not requiring that the plaintiff prove the scientifically unknowable details of which fibers caused what part of his injury. What, then, must the plaintiff show? The *Flores* court answers this question by quoting the well-known California asbestos case, *Rutherford v. Owens-Illinois*,⁴⁶ for the proposition that:

[W]e can bridge this gap in the humanly knowable by holding that plaintiffs may prove causation in asbestos-related cancer cases by demonstrating that the plaintiff's exposure to defendant's asbestos-containing product in reasonable medical probability was a substantial factor in contributing to the aggregate *dose* of asbestos the

67, *Flores v. Borg-Warner Corp.*, No. 98-4954-G (319th Judicial District Court, Nueces County June 12, 2002).

41. *Flores*, 153 S.W.3d 209.

42. *Flores*, 232 S.W.3d 765.

43. *Id.* at 771.

44. *Id.*

45. *Id.* at 771-72.

46. 941 P.2d 1203 (Cal. 1997).

plaintiff or decedent inhaled or ingested, and hence to the *risk* of developing asbestos-related cancer, without the need to demonstrate that fibers from the defendant's particular product were the ones, or among the ones, that *actually* produced the malignant growth.⁴⁷

Thus, *Rutherford*, recognizing the inability of a plaintiff, given the current state of scientific knowledge, to show which asbestos exposures *actually caused* the disease adopted a surrogate for proving causation. Plaintiff need only prove that defendant contributed to the *risk* of disease in exposing the plaintiff to asbestos. In addition, *Rutherford* required that exposure to the defendant's asbestos constitute a "substantial factor" in the overall dose to which plaintiff resolved.

In adopting the substantial factor requirement of *Rutherford*, the *Flores* court, like the *Gregg* court, rejects the holding of its Court of Appeals that "if there is sufficient evidence that the defendant supplied *any* of the asbestos to which the plaintiff was exposed, then the plaintiff has met the burden of proof."⁴⁸ The Texas Supreme Court also noted that its position was the same as that adopted in the *Lohrmann* opinion.⁴⁹ But to prove that defendant's asbestos contributed a substantial factor in the risk of plaintiff's disease, plaintiff must prove not only of the dose of defendant's asbestos to which plaintiff was exposed but also the total dose of asbestos to which plaintiff was exposed. Thus, in the *Flores* court's view, proof of substantial factor will require some sort of determination of the proportion that defendant's asbestos constituted of the total dose.⁵⁰

47. *Flores*, 232 S.W.3d at 772-73 (quoting *Rutherford*, 941 P.2d at 1219) (alteration in original). The *Flores* court overlooked the fact that *Rutherford* involved cancer while *Flores* suffered from asbestosis. The pathology of those two diseases is different with different implications for the causal issues raised by multiple exposures. See *Green*, *supra* note 16, at 328-37; Jane Stapleton, *Two Causal Fictions at the Heart of US Asbestos Doctrine*, 122 L.Q.R. 189 (2006).

48. *Borg-Warner Corp. v. Flores*, 153 S.W.3d 209, 213 (Tex. App. 2004) (emphasis added).

49. *Flores*, 232 S.W.3d at 769.

50. Some passages in the court's opinion support this interpretation of plaintiff's burden. See *id.* at 771 ("This record, however, reveals nothing about how much asbestos *Flores* might have inhaled."); *id.* at 772 ("Nor did *Flores* introduce evidence regarding what percentage of that indeterminate amount may have originated in Borg-Warner products."); *id.* ("the sparse record here contains no evidence of the approximate quantum of Borg-Warner fibers to which *Flores* was exposed, and whether this sufficiently contributed to the aggregate dose of asbestos *Flores* inhaled"); *id.* (adverting to the "the quantitative information necessary to support causation under Texas law"). If the *Flores* opinion were interpreted to require asbestos defendants to provide evidence of the quantitative dose of each defendant's asbestos to which the plaintiff was exposed, it would be asking the impossible in many situations. Unfortunately, a recent subsequent Texas court of appeals case seems to have

Because both the Texas and Pennsylvania Supreme Courts cite *Lohrmann*, and the Texas court relied on *Rutherford* to support its conclusion, a closer examination of those opinions is in order. Both the *Flores*⁵¹ and *Gregg*⁵² courts quoted the following passage in *Lohrmann* in support of their position rejecting the "any exposure" test:

Appellants would have us adopt a rule that if the plaintiff can present any evidence that a company's asbestos-containing product was at the workplace while the plaintiff was at the workplace, a jury question has been established as to whether that product contributed as a proximate cause to the plaintiff's disease. Such a rule would be contrary to the Maryland law of substantial causation.⁵³

It is important to note, however, that *Lohrmann* involves two issues: whether the plaintiff was exposed to a defendant's product at all, and if so, whether the exposure was sufficient to support a finding of causation. In *Lohrmann*, the appellate court affirms the trial judge's decision to direct a verdict for three of the defendants, Raymark, Pittsburgh Corning, and Celotex.⁵⁴ With respect to two of these defendants, Raymark and Celotex, the court grants a directed verdict because the plaintiff was unable to show that he was exposed to their products at all.⁵⁵ The plaintiff's failure with respect to these two defendants was not a failure to show sufficient exposure, but rather a failure to present evidence that he had the right defendants. He could not show their products were a substantial cause of his injury because he could not show he was exposed to any asbestos provided by these defendants. This is not the issue in *Flores* where the defendant concedes that the plaintiff was exposed to its product. One could argue that this is the issue in *Gregg*, but our reading of that opinion is that the Pennsylvania Supreme Court is prepared to affirm a summary judgment for the defendant even if there is uncontroverted proof of some exposure to asbestos provided by the defendant.

Flores's and *Gregg*'s reliance on *Lohrmann* is on firmer ground with respect to the third defendant in *Lohrmann*, Pittsburgh Corning. Mr. Lohrmann worked for thirty-nine years, from 1940 to 1979, at the Key Highway shipyard in Baltimore and testified that he was exposed on an almost daily basis to asbestos. One product he encountered was an asbestos-containing pipe covering called Unibestos. He was exposed to this product for between

adopted just this requirement. See *Ga.-Pac. Corp. v. Stephens*, 239 S.W.3d 304, 319 (Tex. App. 2007).

51. 232 S.W.3d at 769.

52. *Gregg v. V-J Auto Parts, Inc.*, 943 A.2d 216, 225 (Pa. 2007).

53. *Lohrmann v. Pittsburgh Corning Corp.*, 782 F.2d 1156, 1162 (4th Cir. 1986).

54. The court also affirmed a judgment entered on a jury verdict for four remaining manufacturers in the case. *Id.* at 1161-63.

55. *Id.* at 1163-64.

one and eight hours on ten to fifteen occasions during the term of his employment. For part of this time, from 1962 to 1972, Unibestos was manufactured by Pittsburgh Corning.⁵⁶ Based on this record, the Court of Appeals concludes, “[t]he trial court correctly ruled that, viewing the evidence in the light most favorable to the plaintiff, his exposure to Unibestos was not sufficient to raise a permissible inference that such exposure was a substantial factor in the development of his asbestosis.”⁵⁷

If the *Lohrmann* opinion with respect to Pittsburgh Corning lends some support to the *Flores* result and the trial court’s judgments in *Gregg*,⁵⁸ the *Rutherford* opinion seems to suggest that it might treat the two cases differently. In *Rutherford*, the plaintiff died of lung cancer that the jury found was caused by his inhalation of asbestos fibers over a near forty-year career working at the Naval Shipyard at Mare Island.⁵⁹ He sued numerous asbestos manufacturers. All except Owens-Illinois settled prior to trial.⁶⁰ Over the defendant’s objection, the trial court instructed the jury that once the plaintiff establishes that the defendant manufactured or sold defective asbestos-containing products to which he was exposed, the burden on causation shifts to the defendants to prove its product was not the cause of the plaintiff’s injury.⁶¹ The court of appeals held that this instruction was in error and the California Supreme Court agreed.⁶² It found that “no insuperable barriers prevent an asbestos-related cancer plaintiff from demonstrating that exposure

56. *Id.* at 1163. The *Lohrmann* opinion does not disclose how many of Mr. Lohrmann’s encounters with Unibestos occurred during the time the product was manufactured by Pittsburgh Corning. Apparently, however, not all of the exposures were during the ten-year window in which the product was made by the defendant.

57. *Lohrmann*, 782 F.2d at 1163.

58. The *Lohrmann* opinion lends support in terms of the issue being decided. Whether it lends support in terms of the dosage to which the plaintiffs in *Flores* and *Gregg* were exposed is a different question to which we return below.

59. *Rutherford v. Owens-Ill., Inc.*, 941 P.2d 1203, 1208 (Cal. 1997).

60. *Id.* At the liability phase of the trial, the jury was instructed to assign percentages of fault adding up to 100% among the plaintiff, Owens-Illinois, other manufacturers of asbestos to which the decedent was exposed, and each employer that contributed to the exposure. *Id.* at 1209. The jury apportioned 1.2% of the fault to Owens-Illinois, 2.5% to Rutherford, and the rest to all the remaining entities. *Id.* The percentage of responsibility assigned to Rutherford presumably was based on the fact that he had smoked approximately a pack of cigarettes a day over a period of thirty or more years until he quit smoking in 1977. *Id.* at 1208. Because California retains joint and several liability for economic, but not for non-economic damages, the *Rutherford* plaintiffs were entitled to \$177,047 in economic damages and \$2,160 in non-economic damages from the defendant. *Id.* at 1209-10; *see also* CAL. CIV. CODE § 1431.2 (West 2007).

61. *Rutherford*, 941 P.2d at 1206. A discussion of the burden-shifting solution to toxic exposure cases is beyond the scope of this article.

62. *Id.* The *Gregg* court also rejected this idea. *Gregg v. V-J Auto Parts, Inc.*, 943 A.2d 226-27 (Pa. 2007).

to the defendant's asbestos products was, in reasonable medical probability, a substantial factor in causing or contributing to his risk of developing cancer."⁶³ The plaintiff was free to establish that his cumulative disease was the result of many separate exposures each constituting a "substantial factor" that contributed to his risk of injury.⁶⁴

There are three notable aspects of the *Rutherford* opinion on which we tarry before getting to the crux of the matter of how much exposure is enough. These aspects are worthy of attention, both in informing the answer to the how-much-is-enough question as well as observations and arguments that we make below.

First, the court takes an important step in altering the definition of substantial factor found in California pattern jury instructions for asbestos-related cancer cases. The court notes that the standard instruction defines "cause" as something that is a substantial factor in bringing about an injury:

They say nothing, however, to inform the jury that, in asbestos-related cancer cases, a particular asbestos-containing product is deemed to be a substantial factor in bringing about the injury if its contribution to the plaintiff or decedent's *risk or probability* of developing cancer was substantial.

Without such guidance, a juror might well conclude that the plaintiff needed to prove that fibers from the defendant's product were a substantial factor *actually contributing* to the development of the plaintiff's or decedent's cancer. In many cases, such a burden will be medically impossible to sustain, even with the greatest possible effort by the plaintiff, because of irreducible uncertainty regarding the cellular formation of an asbestos-related cancer. We therefore hold that, in the trial of an asbestos-related cancer case, although

63. *Rutherford*, 941 P.2d at 1206.

64. *Id.* at 1207. The substantial factor test is embodied in California Civil Jury Instruction 3.76, which reads: "The law defines cause in its own particular way. A cause of [injury] [damage] [loss] [or] [harm] is something that is a substantial factor in bringing about an [injury] [damage] [loss] [or] [harm]." CALIFORNIA JURY INSTRUCTIONS – CIVIL 3.76 (2007).

In the Comment accompanying the instruction, the Committee on California Civil Jury Instructions notes that the instruction finds its origin in Restatement (Second) of Torts Section 431 and goes on to note that this instruction "avoids the use of the misleading and confusing word 'proximate' and overcomes the inapplicability of the 'but for' rule of causation to two or more responsible causes." CALIFORNIA JURY INSTRUCTIONS – CIVIL 3.76 cmt. (2007) (internal citation omitted) (citing CALIFORNIA JURY INSTRUCTIONS – CIVIL 3.75 cmt. (2007)). The Committee does not attempt to define the word "substantial," but it does state that "[w]hile there is no judicially approved definition of what is a substantial factor for causation purposes, it seems to be something which is more than a slight, trivial, negligible, or theoretical factor in producing a particular result." *Id.*

no instruction “shifting the burden of proof as to causation” to defendant is warranted, the jury should be told that the plaintiff’s or decedent’s exposure to a particular product was a substantial factor in causing or bringing about the disease if in reasonable medical probability it was a substantial factor contributing to plaintiff’s or decedent’s *risk* of developing cancer.⁶⁵

By substituting “risk” for “injury” the court recognizes the difficulty of proving which fibers were actually necessary for plaintiff to contract his disease and consciously eases the burden of proof of causation in this group of cases. Exposure to asbestos increases the *risk* of a number of diseases that have been identified, including asbestosis. Thus, if the dose of the defendant’s asbestos to which plaintiff was exposed (in relation to the total dose) is above the threshold set by the “substantial factor” requirement, plaintiff has satisfied his burden of proof. Second, the California Supreme Court adopted the substantial factor instruction in an earlier case, *Mitchell v. Gonzales*,⁶⁶ in order to avoid a potentially misleading instruction on factual causation that employed “proximate cause” terminology and required that the outcome be the result of a natural and continuous sequence. Distaste for this proximate cause instruction was the primary motivation for adopting the substantial factor alternative..

Finally, the court signaled that it did not mean to have the modifier “substantial” constitute a high threshold. It speaks of insubstantial factors as those which play only an “infinitesimal” or “theoretical” part in bringing about injury, damage, or loss⁶⁷ and notes that “[u]ndue emphasis should not be placed on the term ‘substantial’”⁶⁸ :

For example, the substantial factor standard, formulated to aid plaintiffs as a broader rule of causality than the “but for” test, has been invoked by defendants whose conduct is clearly a “but for” cause of plaintiff’s injury but is nevertheless urged as an insubstantial contribution to the injury. Misused in this way, the substantial factor test “undermines the principles of comparative negligence, under which a party is responsible for his or her share of negligence and the harm caused thereby.”⁶⁹

This passage is not directly applicable to the question of what is substantial for purposes of contributing to *risk*, because it addresses but-for causa-

65. *Rutherford*, 941 P.2d at 1219-20.

66. 819 P.2d 872 (Cal. 1991).

67. *Rutherford*, 941 P.2d at 1214 (quoting *People v. Caldwell*, 681 P.2d 274, 280 (Cal. 1984) (en banc)).

68. *Id.*

69. *Id.* (internal citation omitted) (quoting *Mitchell*, 819 P.2d at 920-21).

tion. Nevertheless, it does reflect an attitude which suggests that so long as an exposure is a but-for cause of harm, it is also a substantial factor. We discuss the contrary position of the Second Restatement below.⁷⁰ Later in its opinion, the *Rutherford* court is more direct about the magnitude of the substantial-factor threshold:

The substantial factor standard is a relatively broad one, requiring only that the contribution of the individual cause be more than negligible or theoretical. A standard instruction (BAJI No. 3.77) tells juries that each of several actors or forces acting concurrently to cause an injury is a legal cause of the injury "regardless of the extent to which each contributes to the injury." A plaintiff who suffers from an asbestos-related cancer and has proven exposure to inhalable asbestos fibers from several products will not, generally speaking, face insuperable difficulties in convincing a jury that a particular one of these product exposures, or several of them, were substantial factors in creating the risk of asbestos disease or latent injury.⁷¹

Again, a central question is how much exposure to the product of a specific defendant is enough to constitute a substantial factor for the risk-contribution scheme adopted by the court? Unfortunately, the California Supreme Court offers very little information about the plaintiff's exposure to the defendant's product. We can glean from the opinion, however, that the exposure was more than *de minimis*. There is no indication that the plaintiff presented expert testimony on dose, but there was evidence that the insulation product in question, Kaylo, was produced by the defendant from 1948 to 1958. Co-workers testified that they worked with Mr. Rutherford below decks on ships while others were ripping out insulation, that Kaylo was used extensively at Mare Island in the 1940's and 1950's, and that the product gave off visible dust when used.⁷² In light of this, the level of exposure to respirable fibers appears to be somewhat greater than that of Mr. Flores's exposure to the Borg-Warner product, Mr. Gregg's exposure to brake pads purchased from V-J Auto Parts, or Mr. Lohrmann's exposure to the Pittsburgh Corning product.

Significantly, however, the *Rutherford* opinion contains strong indications that these other exposures, too, would meet the substantial factor test as it is understood in California. By requiring only that the exposure to defendant's product be a substantial factor contributing to risk and providing that only quite minimal exposures are insufficient to satisfy the substantial factor threshold, it seems quite likely that the *Rutherford* court would disagree with

70. See *infra* notes 77-85 and accompanying text.

71. *Rutherford*, 941 P.2d at 1220.

72. *Id.* at 1208-09.

at least the *Flores* and the *Lohrmann* courts as to whether the plaintiffs' exposures were sufficient to constitute a substantial factor.⁷³ Whether it would disagree with the *Gregg* court is an open question that may turn on how the facts of that case develop on remand.⁷⁴

The differing definitions of substantial factor found in these cases is reflected in many other asbestos cases decided over the last two or three decades. At one end of the spectrum are cases that permit recovery when there is proof that the defendant's product was at the plaintiff's workplace during the time of his employment.⁷⁵ At the other end are cases like *Flores*.⁷⁶ In between are cases like *Gregg*.

IV. THE ORIGINS AND PURPOSE OF THE SUBSTANTIAL FACTOR RUBRIC

Who is right? Under the substantial factor test, it is difficult to say. The uncertainty surrounding the substantial factor test arises because the term has been used in many ways, only some of which were intended by the Second Restatement. As envisioned by that Restatement (and its predecessor, the first Restatement of Torts), the role of the concept was to modify the traditional but-for test in two specific situations.

First, the term was designed to provide a solution to what is frequently called the two-fire problem, evinced by cases such as *Kingston v. Chicago & Northwest Railway Co.*, in which two independently caused fires combine and destroy the plaintiff's property where either fire, in the absence of the other, would have been sufficient by itself to destroy the property.⁷⁷ Restatement (Second) of Torts Section 432 specifically addresses this problem. It states that although an actor's negligence cannot generally be a substantial factor in bringing about a harm unless the harm would not have occurred absent the actor's negligence – the traditional but-for test – an exception exists when “two forces are actively operating, one because of the actor's negligence, the other not because of any misconduct on his part, and each of itself

73. See also *Thacker v. UNR Indus., Inc.*, 603 N.E.2d 449 (Ill.1992) (defendant's contribution of 3% of asbestos at plaintiff's job site in proximity to where she worked sufficient for jury to find it a substantial factor).

74. Specifically, a major question is whether *Gregg* had a forty-year history of occupational exposure for which he nevertheless could not prove which asbestos producers were responsible or whether he had no occupational exposure to asbestos.

75. See *Lockwood v. AC & S, Inc.*, 744 P.2d 605 (Wash. 1987) (accepting a version of the “fiber drift” theory).

76. See also *Blackstone v. Shook & Fletcher Insulation Co.*, 764 F.2d 1480, 1485 (11th Cir. 1985); *In re W.R. Grace & Co.*, 355 B.R. 462, 465 (Bankr. D. Del. 2006).

77. 211 N.W. 913, 914 (Wis. 1927).

is sufficient to bring about harm to another.”⁷⁸ In this circumstance, the actor’s negligence may be found to be a substantial factor in bringing about the harm, thereby satisfying the factual cause requirement.

The modern version of the two-fires problem occurs in toxic substances cases when the plaintiff is exposed to a dose greater than necessary to cause his harm. Thus, let us suppose that a given asbestos worker’s biologic makeup is such that he can ward off a cumulative dose of 1000 units of asbestos, but any greater dose will result in his contracting asbestosis. If he is exposed by twelve different defendants to 100 units each, each defendant might claim that exposure to its asbestos is not a but-for cause because plaintiff would have contracted the disease even in the absence of that exposure. For the same reason as with the two-fire hypothetical above, the substantial factor standard can be employed to expand the scope of factual cause to include this circumstance. We note in passing here, and return later to the idea, that *Rutherford’s* standard of contributing to the risk of disease obviates the need for this use of substantial factor. All defendants who are responsible for exposure to 100 units of asbestos have contributed to the risk of disease.

Although the language of the Second Restatement is clear about the limited scope of the substantial factor provision, at times courts have applied it in situations where the tortious conduct of each of two parties is required to cause harm.⁷⁹ However, if each of two defendants expose the plaintiff to 600 units of asbestos, each defendant is a but-for cause of the plaintiff’s harm, and there is no need to advert to the substantial factor concept.⁸⁰ Sometimes when courts say they are using a substantial factor test in this situation, they then proceed to provide a definition of substantial factor that is the same as the but-for test. When they do so, their only sin is the needless multiplication of terms and potential confusion to others. As Professor Robertson explains:

78. RESTATEMENT (SECOND) OF TORTS § 432 (1965). The Third Restatement of Torts describes this situation as one of “multiple sufficient causes.” RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 27 (Proposed Final Draft No. 1, 2005). This new language builds on a body of scholarship published in the years between the two Restatements that gave us a clearer understanding of the proper scope of this rule and the nature of the but-for test. Professor Fischer’s writings were an important contribution to this new understanding. See Fischer, *Omission Cases*, *supra* note 4; David A. Fischer, *Causation in Fact in Products Liability Failure to Warn Cases*, 17 J. PRODUCTS & TOXICS LIAB. 271 (1995); Fischer, *supra* note 6; Fischer, *supra* note 1. For other important works in this area, see Richard W. Wright, *Causation in Tort Law*, 73 CAL. L. REV. 1735 (1985); Jane Stapleton, *Legal Cause: Cause-in-Fact and the Scope of Liability for Consequences*, 54 VAND. L. REV. 941 (2001); H.L.A. HART & TONY HONORÉ, *CAUSATION IN THE LAW* (2d ed. 1985).

79. See *Knodle v. Waikiki Gateway Hotel, Inc.*, 742 P.2d 377, 386-90 (Haw. 1987); *Sumnicht v. Toyota Motor Sales, U.S.A., Inc.*, 360 N.W.2d 2, 11 (Wis. 1984).

80. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 26 cmt. i (Proposed Final Draft No. 1, 2005) (distinguishing between “multiple causes” and “multiple sufficient causes”).

The real trouble begins when courts go a step further and start treating the relatively vague substantial factor vocabulary as an improvement upon the but-for test with respect to any multiple causation case in which analysis appears difficult. As we have seen, the only multiple causation cases that are legitimately solved by the substantial factor test are the “combined force” situations in which we are morally certain that the but-for test stubbornly persists in yielding the wrong answer. When courts begin turning to the substantial factor vocabulary in a broader range of cases, valuable precision of analysis is lost and nothing is gained.⁸¹

The danger to which Professor Robertson adverts is that in fact patterns that are outside the two-fire situation a jury will be encouraged to find causation even when the defendant’s conduct is not a but-for cause of the plaintiff’s injury.⁸²

The second situation in which the Second Restatement envisions a separate role for the substantial factor test is where but-for causes are sufficiently trivial that they should be ignored:

In order to be a legal cause of another’s harm, it is not enough that the harm would not have occurred had the actor not been negligent. Except as stated in [Section] 432(2), this is necessary, but it is not of itself sufficient. The negligence must also be a substantial factor in bringing about the plaintiff’s harm. The word “substantial” is used to denote the fact that the defendant’s conduct has such an effect in producing the harm as to lead reasonable men to regard it

81. David W. Robertson, *The Common Sense of Cause in Fact*, 75 TEX. L. REV. 1765, 1779-80 (1997) (footnote omitted).

82. For courts using “substantial factor” to mean something less than but-for cause, see, for example, *Mayhue v. Sparkman*, 653 N.E.2d 1384 (Ind. 1995), *Robertson v. Counselman*, 686 P.2d 149 (Kan. 1984), and *Hake v. Manchester Township*, 486 A.2d 836 (N.J. 1985).

For a recent case discussing this danger and refusing to use the substantial factor test in any multiple cause situation, see *In re Hanford Nuclear Reservation Litigation*, 497 F.3d 1005 (9th Cir. 2007). Plaintiffs in this case sought to have the court employ a substantial factor test even in the absence of evidence of “multiple, independent causes.” *Id.* at 1028-29 (quoting *Gausvik v. Abbey*, 107 P.3d 98, 108 (Wash. Ct. App. 2005)). The court noted that this would allow the substantial factor test to supplant but-for causation in virtually all toxic tort cases and held that this position is “inconsistent with existing Washington law, which applies the substantial factor test in very limited circumstances.” *Id.* at 1029 (citing RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 26 cmt. j (Proposed Final Draft No. 1, 2005) (eliminating the substantial factor test)). See also Aaron D. Twerski & James A. Henderson, Jr., *Torts: Cases and Materials* 232 (2d ed. 2008) (“The [Third] Restatement has wisely rid itself of the substantial factor test. . . . [T]he substantial factor test caused confusion. . . . Few will mourn the passing of the ‘substantial factor’ test.”).

as a cause, using that word in the popular sense, in which there always lurks the idea of responsibility, rather than in the so-called "philosophic sense," which includes every one of the great number of events without which any happening would not have occurred. Each of these events is a cause in the so-called "philosophic sense," yet the effect of many of them is so insignificant that no ordinary mind would think of them as causes.⁸³

Comment *a* makes it clear that this second use of the substantial factor test is not intended to expand causation where the but-for test is unsatisfied. Rather, it is intended to do the opposite – to prevent a determination of causation where the but-for test would otherwise provide it.⁸⁴ Its purpose is to excuse defendants whose conduct is a but-for cause of harm when the effect of that conduct "is so insignificant that no ordinary mind would think of [it] as [a] cause[]." ⁸⁵ It is this use of substantial factor that is at the core of *Lohrmann*, *Rutherford*, *Gregg*, and *Flores* as well as many other asbestos cases.

It is important to keep in mind that Comment *a* contemplates that this use of substantial factor is appropriate where it is clear that the defendant's actions were a but-for cause that was nevertheless insubstantial. In asbestos litigation, courts from *Borel* through *Rutherford* recognized that plaintiff could not prove which asbestos exposures were the but-for cause of his dis-

83. RESTATEMENT (SECOND) OF TORTS § 431 cmt. a (1965).

84. This second purpose for "substantial factor," screening out some but-for causes on evaluative grounds, has confused courts and commentators as to whether it is truly about factual cause or about limiting liability on proximate cause grounds. As the Third Restatement observes:

The treatment of "substantial factor" in both [the first and Second] Torts Restatements is confusing. Although it appears to provide the standard for determining factual causation in [Section] 431, its evaluative component and its invocation in [Section] 433 make it appear to be doing scope-of-liability (proximate-cause) duty. In the Reporter's Notes to [Section] 433 of the Restatement Second of Torts, Prosser stated, "the 'substantial factor' element deals with causation in fact." Ironically, the author of the substantial-factor test, Jeremiah Smith, intended it to address the problem of proximate cause, not factual cause. Smith envisioned the use of but-for as the standard for factual causation, while arguing that some additional limitation on liability also was required in at least a small class of cases. By the time of the fifth edition of the Prosser treatise (after his death), it had come around to the view that the substantial-factor limitation was an evaluative limitation on liability rather than an aspect of factual causation.

RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 26 cmt. j, rptrs. note (Proposed Final Draft No. 1, 2005) (internal citations omitted) (citing RESTATEMENT OF TORTS § 433 (Reason for Changes, 1948 Supp.); Jeremiah Smith, *Legal Cause in Actions of Tort*, 25 HARV. L. REV. 103, 108-110 (1911); W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 267 (5th ed. 1984)).

85. RESTATEMENT (SECOND) OF TORTS § 431 cmt. a (1965).

ease. Hence, *Borel* indulged in the fiction that each exposure contributed some marginal enhancement of plaintiff's disease while *Rutherford* modified the inquiry from *causing* the harm to contributing to the *risk* of harm, which is true of all exposures to asbestos.⁸⁶

Comment *a* provides limited assistance in sorting out the questions confronted in cases like the ones discussed in this paper. We will be better served in starting over and addressing the question presented in these cases outside the context of the language of the Second Restatement.

V. THE INSUBSTANTIALITY OF SUBSTANTIAL FACTOR

The place to start is the *Restatement (Third) of Torts: Liability for Physical and Emotional Harm*. Section 26 of the Third Restatement returns four-square to the but-for test and explicitly rejects the substantial factor test.⁸⁷ Comment *j* explains why the Third Restatement abandons the substantial factor test, noting that it leads to both a too rigorous standard, i.e., when it requires more than a but-for cause to satisfy factual causation, and a too lenient standard, i.e., when something less than a but-for cause is permitted to satisfy the requirement of factual causation. Specifically, the comment and the reporters' notes that accompany it reject the use of the substantial factor test to justify the elimination of trivial causes as causes.⁸⁸

As adapted to the asbestos context, the reasoning runs something like this: Suppose we know that it takes a threshold dose of 100 units of asbestos exposure for an individual to develop some specific asbestotic disease. If three defendants contribute 99.9 units and another defendant contributes the additional .1 unit necessary for the plaintiff to contract the disease, isn't that

86. For diseases whose severity is dose independent (cancer), all exposures to the point at which plaintiff's disease is determined contribute to the risk. For dose-dependent diseases, even later exposures may contribute to the severity of the disease.

87. The black letter of Section 26 reads: "Tortious conduct must be a factual cause of physical harm for liability to be imposed. Conduct is a factual cause of harm when the harm would not have occurred absent the conduct. Tortious conduct may also be a factual cause of harm under [Section] 27." RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 26 (Proposed Final Draft No. 1, 2005).

Section 27 sets forth the exception for the "two-fire" cases. Section 27 states: "If multiple acts exist, each of which alone would have been a factual cause under [Section] 26 of the physical harm at the same time, each act is regarded as a factual cause of the harm." *Id.* § 27. Comment *a* to this Section and Comment *i* to Section 26 make it clear that this provision does not apply to all situations where there are multiple responsible causes, but only to the situation where there is more than one set of sufficient causes. *Id.* § 26 cmt. i; *id.* § 27 cmt. a.

88. For examples of cases compatible with this view, see *Mitchell v. Gonzales*, 819 P.2d 872, 879 (Cal. 1991), and *Culver v. Bennett*, 588 A.2d 1094, 1099 (Del. 1991).

defendant a cause of the plaintiff's disease? In short, the straw that breaks the camel's back is a cause of the broken back.⁸⁹

The Third Restatement does recognize a trivial-contribution exemption, but in a limited context and as a matter of scope of liability (proximate cause), rather than factual cause. That exemption, however, only applies in Section 27 situations – that is situations where there are multiple sufficient causal sets.⁹⁰

89. The Prosser treatise provides an example – a defendant who throws a lighted match into a forest fire – that is designed to justify the substantial factor threshold for factual causes. See W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 267-68 (5th ed. 1984). We do not find it persuasive. First, the example does not specify the harm for which we are to examine the causal role of the match. Causal inquiries cannot be conducted without identification of the harm or outcome of interest. See Robertson, *supra* note 81. But let us suppose that this is a modification of the two-fires hypothetical, suggesting that the harm of interest is the plaintiff's home that burned down as a result of the fire. It is difficult to understand how the lighted match could be a but-for cause – that would require that the forest fire didn't have quite enough heat to make it to the plaintiff's home and the additional BTUs provided by the match enabled it to get over the hump. Moreover, it seems unlikely that the match, without the forest fire, would have been sufficient to burn down the home and thereby is a multiple sufficient cause. Thus, we are left wondering how the match could have been any kind of factual cause, substantial or not.

There is one other possibility—and it makes the lighted match example quite comparable to the question under consideration in *Flores*. If we assume that there is a minimum amount of fire energy required to burn the house, then we might think of the lighted match as contributing a portion of that minimum energy and it then, in combination with some portion of the forest fire energy, becomes a sufficient set to burn down the house. Note that this circumstance is one in which the match is not a but-for cause, but part of a multiple sufficient set. It is also conceptually problematic because it requires conceiving of riving the forest fire into two fires – one not quite strong enough to burn down the house on its own (and therefore requiring the boost from the lighted match) and the remainder of the forest fire.

Finally, we should mention the more plausible scenario, which is that the match contributes some small amount of heat energy that results in either the fire getting to the house a tad quicker or burning the house a touch more severely. In that instance, the match is a but-for cause of some marginal harm, and we don't understand why the individual who negligently discarded it should not be liable for that harm.

90. "When an actor's negligent conduct constitutes only a trivial contribution to a causal set that is a factual cause of physical harm under [Section] 27, the harm is not within the scope of the actor's liability." RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 36 (Proposed Final Draft No. 1, 2005). Comment *b* states "[t]he exception applies only when there are multiple sufficient causes and the tortious conduct at issue constitutes a trivial contribution to any sufficient causal set." See *id.* cmt. *b* & illus. 1, 2.

Comment *a* of Section 36 says that this Section preserves the limitation on liability that the substantial-factor requirement played in the prior restatements. *Id.* cmt. *a*. On reflection, two of us (WCP and MDG) were wrong in making that state-

If we adopt the Third Restatement position, how should *Gregg*, *Flores*, *Lohrmann*, and *Rutherford* be decided? The answer is, we do not know until we make a prior determination concerning the relationship of the defendants' products to the plaintiffs' diseases. If we were to determine that in each of the cases the contribution of the relevant defendant (V-J Auto Parts, Borg-Warner, Pittsburgh-Corning, and Owens-Illinois respectively), is a necessary element of a single causal set, then under the Third Restatement view only *Rutherford* reaches the correct outcome, which is that each is a factual cause subject to liability. The jury would assign a percentage of liability to each defendant even though its contribution to the overall dose is small (yet necessary for the plaintiff's disease).

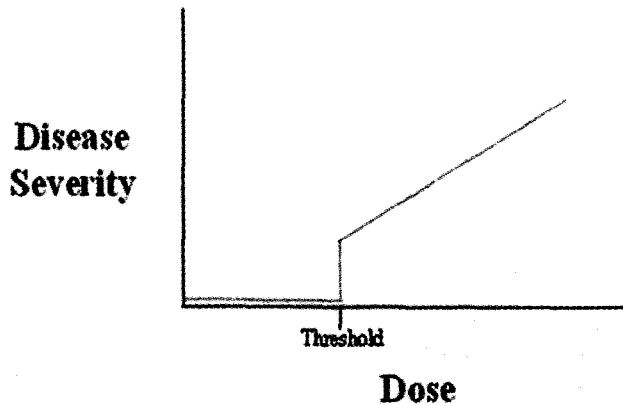
If, on the other hand, we conclude that the contribution of these defendants is more than sufficient to produce the injury, i.e., constitutes multiple sufficient causes as explained above,⁹¹ then whether the cases are rightly decided turns on whether the dose-exposure contribution of the defendant is sufficiently de minimis so that it is appropriate for the court to relieve that defendant of liability on proximate cause grounds.

In *Flores* and *Lohrmann*, the plaintiff is suffering from asbestosis. It is commonly thought that asbestosis is a disease that occurs in individuals who have worked directly with asbestos for several decades, that a threshold dose sufficient to cause the disease is required and thereafter its severity follows a dose-response relationship. Thus, in Figure 1, those defendants who contributed to provide the threshold dose would be liable for the initiation of the disease, as well as its exacerbation due to the additional doses. Defendants responsible for exposures after the threshold was reached and the disease determined would not be liable for the initiation of the disease – on the ground that an outcome cannot be caused by events that occur after the outcome – but would be liable for their marginal aggravation of the disease.

ment. Recall that the substantial factor limitation on causation is to be found in Section 431 of the Second Restatement, and a fair reading of the provision is that a substantial factor limitation exists even in situations where there is but one set of sufficient conditions, i.e., the .1 unit contribution identified above. Indeed, there is an extensive explanation in the Reporters' Notes taking issue with Section 431 for its limitation in just that situation. See *id.* § 26 cmt. j, rptrs. note.

91. See text accompanying notes 77-79.

FIGURE 1



For the moment, let's assume that that is the case in both *Flores* and *Lohrmann*. Even when multiple causal sets do exist, *Restatement (Third)* Section 36 provides for a proximate cause defense only when the contribution is trivial. How small does an exposure have to be to count as trivial? Illustration 1 in Section 36 counts as trivial a one day exposure to the defendant's product where the plaintiff had exposure to a dozen other manufacturers' products over a period of forty years. However, there is no "bookend" illustration that provides an example of the upper bounds of the trivial contribution exemption. Restatement Illustrations are not designed to identify where, precisely, on a spectrum the law draws the line. Instead, they are designed merely to provide what is clearly on each side of the line.

Moreover, the determination of where the trivial line is drawn should not be made on an absolute basis, but relative to the other exposures. Consider a plaintiff exposed to a small dose of a toxin from each of 2,001 different defendants and that a sufficient dose to cause disease is 1/2000 or just slightly less than .05% of what each defendant provided. In this situation, if .05% is deemed trivial, every defendant will escape liability.⁹² Yet if four defendants

92. Thus, we do not think that courts can evaluate insubstantiality by comparing one defendant's dose with all of the others combined, as in the *Gregg* court may have. Recall that plaintiff in that case had been exposed to defendant's asbestos-containing brake products on a few occasions but originally alleged a forty-year occupational history of asbestos exposure. See *Gregg v. V-J Auto Parts, Inc.*, 943 A.2d at 219 (Pa. 2007). Only if the forty-year exposure was to a small enough group of

each contribute 25% of a sufficient dose and one other defendant provides .05% of a sufficient dose, the .05% dose is plainly trivial by comparison and should exempt that defendant from liability. In *Flores*, the court identified only five other brands of brakes with which plaintiff worked and only three of those were apparently parties in the case he brought.⁹³ Yet if Borg-Warner's brakes provided as much as 6% of the total exposure, as the jury might plausibly have found (or even as little as 2%),⁹⁴ most courts would not consider that to be trivial in comparison to others' contribution of, on average, approximately 19%.

Let's turn to the situation in *Gregg*, in which the plaintiff suffered from mesothelioma. The most plausible account of the mechanism by which mesothelioma occurs is the "single hit" theory that one disturbance of a single cell in the victim sets off the cancer process, although total dose increases the probability of getting the disease.⁹⁵ If the "one hit" theory is correct, any dose could be the "cause" of the plaintiff's disease. Even if the single hit theory is not the mechanism, available evidence suggests that the threshold dose required for mesothelioma is quite low.⁹⁶ Once, however, the disease is

asbestos-product producers that exposure to each of them dwarfed the brake exposure, a matter the court did not address, would consideration of insubstantiality be appropriate.

93. *Borg-Warner Corp. v. Flores*, 232 S.W.3d 765, 766 n.2 (Tex. 2007).

94. *See supra* note 40.

95. *See* 3 FAIGMAN ET AL., *supra* note 10, § 26:24.

96. The best summary of what is known about mesothelioma for purposes of understanding its causal dose-response function was provided by Lord Bingham in *Fairchild v. Glenhaven Funeral Services Ltd.*, [2003] 1 A.C. 32 (H.L. 2002):

It is a condition which may be latent for many years, usually for 30-40 years or more; development of the condition may take as short a period as ten years, but it is thought that that is the period which elapses between the mutation of the first cell and the manifestation of symptoms of the condition. It is invariably fatal, and death usually occurs within 1-2 years of the condition being diagnosed. The mechanism by which a normal mesothelial cell is transformed into a mesothelioma cell is not known. It is believed by the best medical opinion to involve a multi-stage process, in which 6 or 7 genetic changes occur in a normal cell to render it malignant. Asbestos acts in at least one of those stages and may (but this is uncertain) act in more than one. It is not known what level of exposure to asbestos dust and fibre can be tolerated without significant risk of developing a mesothelioma, but it is known that those living in urban environments (although without occupational exposure) inhale large numbers of asbestos fibres without developing a mesothelioma. It is accepted that the risk of developing a mesothelioma increases in proportion to the quantity of asbestos dust and fibres inhaled: the greater the quantity of dust and fibre inhaled, the greater the risk. But the condition may be caused by a single fibre, or a few fibres, or many fibres: medical opinion holds none of these possibilities to be more probable than any other, and the condition once caused is not aggravated by further exposure.

determined, its severity is unaffected by any additional doses. These two mechanisms are revealed in Figures 2 and 3 below.

FIGURE 2

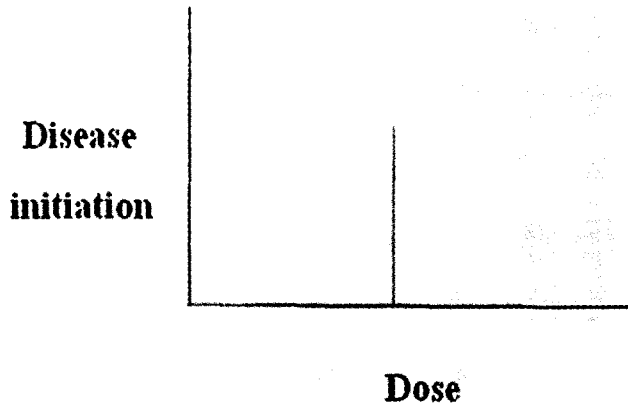
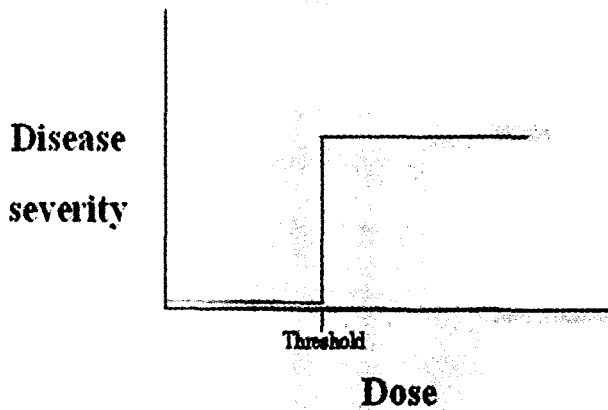


FIGURE 3



But to state this information about the most plausible account for the mechanism by which asbestotic disease develops is to reveal the inability to make causal determinations of the sort required by Section 36 of the Third Restatement. We just don't know which particular asbestos fibers contributed to the threshold dose; indeed, given individual variability, we don't know what the threshold dose is for any individual. To employ a non-asbestos example, some smokers are exposed to a heavy dose of cigarette smoke yet never contract lung cancer, while others contract lung cancer after being exposed to a fraction of that dose of cigarette smoke. If we don't know the threshold dose, we don't know which exposures may have overdetermined the threshold dose, which were responsible not for the initiation of the disease but rather potentially its aggravation, and which, if any, had no effect because the disease reached its ultimate severity or determined the death of the victim before that exposure occurred.

These uncertainties are an important reason why courts from *Borel* in Texas to *Rutherford* in California to *Fairchild* in England, have permitted asbestos plaintiffs to prevail without requiring they prove which defendant(s)'s asbestos was a but-for cause of the harm. The outcome could have been otherwise, but if it had and we were honest about requiring a plaintiff to prove but-for causation, plaintiffs could not prevail in most asbestos claims, especially those involving mesothelioma. Whatever the means for permitting plaintiffs to proceed without identifying which defendants were a cause of the harm – *Borel*'s contribution to severity, *Rutherford*'s risk contribution, or other courts' overdetermined threshold conceptualization (all doses contribute to overdetermine the disease) – we simply don't know which exposures are causal and which are not.

Given the reality of causal uncertainty, we believe the *Rutherford* solution to the problem is the best yet devised. The *Rutherford* approach of imposing liability for *risk contribution* is self correcting in the case of small doses, at least in jurisdictions with several liability.⁹⁷ The defendant who contributes .05% of the dose to which the plaintiff was exposed will be liable for that same percentage of the plaintiff's damages.⁹⁸ We think that helps explain why the *Rutherford* court could be as sanguine as it was about emphasizing the insubstantiality of the substantial factor test it adopted with regard to risk contribution.⁹⁹ The *Rutherford* method of overcoming the difficulties of asbestos claimants in proving causation is preferable to that em-

97. The statement in the text is true when jurisdictions apportion liability on the basis of risk contribution, rather than comparative fault, as prescribed by the Restatement (Third) of Torts: Apportionment of Liability. For an explanation of why asbestos is a poor candidate for apportionment on the basis of comparative fault, see Green, *supra* note 16.

98. This assumes that apportionment is permitted to asbestos product manufacturers who have been through bankruptcy and resolved their obligations to claimants in the bankruptcy process and, to a lesser extent, to others who may be unknown.

99. See *supra* text accompanying notes 59-72.

ployed in *Borel*, which dates all the way back to when asbestos litigation was just dawning. At that time, the diseases it caused were not well understood in the courts, joint and several liability prevailed, the defendants on whom liability was imposed were major asbestos-product producers, and there was little reason to anticipate the impact of joint and several liability due to the bankruptcies of virtually all of those major asbestos product manufacturers. All asbestos defendants do not contribute to indivisible disease, and even later exposures for asbestosis victims, which may enhance the severity of the disease, are not responsible for the state of the disease produced by all earlier exposures. Especially with respect to mesothelioma, risk contribution is more honest, consistent with existing scientific information, and provides a ready and more efficient mechanism for apportioning liability among those to whose asbestos plaintiff was exposed.

The real concern in many of these cases is the relative allocation of responsibility to various defendants. One of the reasons the *Rutherford* court was relatively undisturbed about the trial outcome in the case is that the jury seems to have attributed an appropriate share of liability to the defendant: 1.2%. In *Flores*, however, the jury apportioned 37% of the liability to Borg-Warner even though it was responsible for less than 10% and perhaps as little as 2% of the asbestos to which plaintiff was exposed.¹⁰⁰ This disjunction between risk contribution and liability is troubling, at least in a day when we have largely lost our moral commitment to joint and several liability and are involved in a litigation (asbestos) that puts joint and several liability to its severest test.

100. One explanation for the 37% allocation to Borg-Warner is that, at the time, Texas only permitted apportionment to parties and those who had settled. See TEX. CIV. PRAC. & REM. CODE § 33.003 (1995). (Shortly after the trial in *Flores*, Texas changed its law to permit apportionment to responsible non-parties who the defendant could add as "responsible third parties." See TEX. CIV. PRAC. & REM. CODE § 33.003 (a)(4) (2003).) *Flores* only sued four defendants, presumably because the others with whose brake pads he had worked were in or had been through bankruptcy and therefore could not be sued or because he could not identify them. Thus, the jury could only allocate to the one remaining defendant, Borg-Warner and the three others with whom *Flores* had settled. We do not have any information on the percentage of total exposure from these four sources attributable to Borg-Warner brake pads and, therefore, cannot determine whether the jury based its percentage allocations on a causal contribution or a fault analysis.

It is also worth noting that Texas law at the time contained a provision making toxic tort defendants jointly and severally liable if they were apportioned 15% or more causal contribution by the jury. See TEX. CIV. PRAC. & REM. CODE § 33.013(c)(2) (1995). Thus, under Texas law as it existed, Borg-Warner was jointly and severally liable for the entirety of the damages with only a credit against the jury's award of damages based on the settlements with the other three defendants. In 2003, the legislature amended §33.013 by deleting this provision. Today, in almost all situations, the threshold for joint and several liability is fifty-percent.

This, then, puts *Flores* in a different light in which the jury's apportionment was so different from the relative exposure that the court invoked the substantial factor requirement to rectify the disproportionate liability.¹⁰¹ In that regard, the *Flores* court would be engaging in a modern version of what courts did before comparative assessments were available and allowed indemnity on a passive-active basis among two tortfeasors. Courts permitted indemnity rather than requiring sharing the liability through contribution because the "passive" tortfeasor was so much less culpable than the "active" tortfeasor that the all-or-nothing method of indemnity apportionment was closer to the comparative culpability of the parties than a fifty-fifty pro rata apportionment under contribution would have been.¹⁰²

The problem is even more acute in jurisdictions that retain full joint and several liability. This concern is as serious as it can get in the asbestos litigation given the number of manufacturers that have been through bankruptcy and whose trusts for claimants only pay a fraction of the claim. Very small, indeed trivial, contributors could be liable for substantial portions of the harm, and these defendants of today – like Borg-Warner and V-J Auto Parts – are likely to be far less culpable than the major asbestos manufacturers who have all been through bankruptcy. If one believes that asbestos is a poor context for joint and several liability, then the temptation to employ the substantial factor test to raise the barrier to liability is tempting. This concern played a role in *Gregg* where the court noted:

[W]e do not believe that it is a viable solution to indulge in a fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue concerning substantial-factor causation in every "direct-evidence" case. The result, in our view, is to subject defendants to full joint-and-several liability for injuries and fatalities in the absence of any

101. We acknowledge that this disjunction may occur when fault rather than risk contribution is the basis for or even a factor in the jury's apportionment of liability. See RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT OF LIAB. § 26 (2000) (providing for apportionment of an indivisible injury on the basis of comparative fault). The *Flores* court does not explain the basis for the jury's apportionment, but we understand from a prominent Texas asbestos lawyer that frequently the basis for apportionment of liability among defendants is based on what evidence is available about time of exposure, asbestos content of defendant's product, and proximity to the product – all risk rather than culpability factors. See Green, *supra* note 39, at n.59. That was certainly the basis of defense counsel's argument in *Flores* about the appropriate method for apportioning liability in that case. See note 40 *supra*.

102. "These doctrines [active- and passive-negligence and primary and secondary liability] were developed before comparative responsibility. They avoided the harsh effect of pro rata contribution when one of the tortfeasors was substantially more culpable than the other. They are inconsistent with the goals of comparative responsibility." RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT OF LIAB. § 22 cmt. e, rptrs. note (2000).

reasonably developed scientific reasoning that would support the conclusion that the product sold by the defendant was a substantial factor in causing the harm.¹⁰³

Yet the substantial factor approach is only a partial fix for this problem, as there will be some defendants whose connection will be such that a court cannot seriously claim it was not a substantial factor. Moreover, the substantial factor approach proceeds without acknowledging and recognizing the real problem that exists in asbestos litigation with multiple exposures of widely varying intensities across multiple diseases with different causal mechanisms. Not only is substantial factor an inadequate finger in the hole of the dike, there is the possibility that the substantial factor rubric will be shuttled off to other contexts to eliminate liability where the concerns involved in asbestos litigation do not exist.

The *Gregg* case may be an example of the inadequacy of the substantial factor solution to disproportionate liability. Recall that at best the plaintiff can show that the decedent was only exposed to the defendant's product three times when he "scuffed" asbestos-containing brake pads and was exposed to fibers for no more than thirty minutes on each occasion.¹⁰⁴ Certainly, if Mr. Gregg had been suffering from a serious case of asbestosis we might agree that the defendant's contribution to this disease is indeed trivial, perhaps no more than the background exposure we all face. The de minimis substantial factor test provides an escape hatch from the consequences of joint and several liability even though it might be fair to say that even this very small exposure contributed to the risk of the plaintiff's illness. On the facts of *Gregg*, however, the issue is more complex. Recall that Mr. Gregg suffered from mesothelioma and our ability to ascertain the probability that this particular exposure caused (or contributed to the risk of) the decedent's illness is very difficult. Recall, also, that the best thinking about the causal mechanism of mesothelioma is that it can be caused by a single asbestos fiber or at least a very low-dose exposure. The situation becomes even more problematical when we inquire as to his other asbestos exposures. If we were to believe the plaintiff's original pleading, we might conclude that as weighted against a lifetime of occupational exposure, the defendant's share of the total asbestos inhaled by Mr. Gregg is infinitesimal. On the other hand, if we were to believe the plaintiff's last pleading, claiming the decedent's only asbestos exposure came from

103. *Gregg v. V-J Auto Parts, Co.*, 943 A.2d 216, 226-27 (Pa. 2007). Pennsylvania currently retains joint and several liability after a legislative provision imposing a threshold of greater than 60% comparative responsibility before a defendant is jointly and severally liable was struck down because it violated the single subject rule of the state constitution. See *DeWeese v. Weaver*, 880 A.2d 54 (Pa. Commw. Ct. 2005), *aff'd*, 906 A.2d 1193 (Pa. 2006). Texas, on the other hand, retains joint and several liability only for defendants who are found to be more than 50% at fault, although that was not the law applicable at the time of *Flores*. See note 100 *supra*.

104. *Gregg*, 943 A.2d at 224-25.

changing defendant's brake pads, then it would have contributed far more than a trivial percentage of all inhaled fibers from an identifiable source.¹⁰⁵

We think that at least in jurisdictions in which joint and several liability is not embedded in all situations, there are other, and better ways to handle the problem of liability out of proportion to contribution. They include the use of a remittitur (on the percentage of comparative responsibility), requiring a new trial unless the plaintiff consents to a reduction in a defendant's apportioned share of liability. Courts employ remittitur with some regularity and have employed it in recent years with regard to apportionment of liability.¹⁰⁶ Insofar as joint and several liability is the culprit, then we should work toward legislative change, and to the extent possible, courts should carve out exceptions to this rule in situations such as *Gregg*. England recently followed that course in 2006 when it adopted risk contribution as the basis for apportioning liability among multiple employers who exposed their employees to asbestos and limited each employer's liability to its risk contribution share.¹⁰⁷

VI. CONCLUSION

There are obvious advantages to returning to the but-for test of causation. The ambiguity surrounding the substantial factor test leads to inconsistent results, at least across jurisdictions. More importantly, the test gives no clear guidance to the factfinder about how one should approach the causal problem. It also permits courts to engage in fuzzy-headed thinking about what sort of causal requirement *should* be imposed on plaintiffs, especially in cases that present complications in the availability of causal evidence. The but-for test, on the other hand, offers a roadmap on how to think about causation. Professor Robertson explains the difference:

The but-for test calls for a rather definite mental or analytical operation – asking whether the particular injuries probably would still have occurred had the particular negligent conduct not been engaged in. But with the substantial factor test, “we suspend our commitment to the analytical approach and use a term, ‘substantial

105. If this is the situation in *Gregg* and if the substantial factor test applies only when the plaintiff's exposure to the defendant's asbestos is a small fraction of the plaintiff's total exposure, then arguably *Flores* presents a stronger case for the application of the substantial factor test than *Gregg*.

106. See RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT OF LIAB. § 7 cmt. i, rptrs. note (2000). The Apportionment Restatement provides for readjusting a jury's apportionment of liability. *Id.* § 7. Constitutional limitations on additur in federal court should not be an impediment to a reduction of the apportioned liability of a defendant, in the way that it would if it increased the apportioned liability of a defendant.

107. See *Barker v. Corus UK Ltd.*, [2006] 2 A.C. 572, 572 (H.L.).

factor,’ that incorporates no particular mental operation but appeals forthrightly to instinct.”¹⁰⁸

But we can’t demonstrate the advantage of but-for causation over the substantial factor approach in a context like asbestos, where proof of causation is not possible. Under the circumstances we have no quarrel with jurisdictions that relax their proof requirements and permit plaintiffs to do something less than show that exposure to a given defendant’s asbestos products was a factual cause of the harm. But-for causation simply won’t work in these circumstances. Nor do we object to the effort on the part of courts to limit the extent of liability for defendants who have made small contributions to the overall dose to which the plaintiff was exposed. However, even in this situation, the substantial factor test obfuscates what is really going on and permits courts to proceed without grappling with the real issues presented and resolving them on a transparent and honest basis. Recognition of the very difficult problems of proof in asbestos, a predicate to a coherent response to that problem, can’t proceed without a clear grasp on what we mean by causation and the role of but-for in that definition.

We think that David would concur at least with our final exhortation that courts confront the real causal issues involved in asbestos litigation rather than avoid them with a substantial factor device. He, after all, spent a considerable portion of his career carefully identifying and illuminating some of the most difficult causal issues the law confronts.

108. Robertson, *supra* note 81, at 1779; *see also* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL HARM § 26 cmt. j (Proposed Final Draft No. 1, 2005).

