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Kristen M. Hoehn

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DAUBERT UPDATE: THE PRACTICAL EFFECTS OF THE KUMHO TIRE DECISION*

KRISTEN M. HOEHN

I. INTRODUCTION

THE FEDERAL RULES of Evidence were made effective July 1, 1975. Twenty-five years later we can conclusively make the following assertions with respect to expert testimony:

- General acceptance¹ is not a necessary pre-condition to admissibility.²
- Courts serve a gate keeping function of assessing reliability and relevance.³
- All experts are subject to reliability and relevance examination.⁴

However, practitioners continue to struggle with the application of these principles.

II. THE TRINITY

Any examination of the law concerning admissibility must begin with a discussion of three U.S. Supreme Court decisions: *Daubert v. Merrell Dow Pharmaceuticals*,⁵ *General Electric Co. v. Joiner*,⁶ and *Kumho Tire Co. v. Carmichael*.⁷

* This paper would not have been possible without the tireless assistance of Laura MacGregor Comek, who, in January 2000, after recent admission to the Ohio bar, became an attorney with Crabbe, Brown, & James.

¹ See *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923).

² See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 588-89 (1993).

³ See *id.* at 589.

⁴ See *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147-50 (1999).

⁵ 509 U.S. 579 (1993).

⁶ 522 U.S. 136 (1997).

⁷ 526 U.S. 137 (1999).

A. DAUBERT

Plaintiffs/Petitioners were minor children born with serious birth defects. Their parents brought suit alleging the birth defects had been caused by the mother's ingestion, during pregnancy, of Bendectin, a commonly described anti-nausea drug.⁸ Plaintiffs' experts testified that Bendectin could cause birth defects. They based their conclusion on in-vitro studies, in-vivo animal studies, pharmacological studies of Bendectin's chemical structures, and reanalysis of epidemiological studies.

Defendants' expert testified that Bendectin did not cause birth defects. He based his conclusion on a review of all literature-thirty published studies involving over 130,000 patients. No study found Bendectin caused birth defects.

The court granted Defendants summary judgment. The district court concluded, "causation may be shown only through reliance upon epidemiological evidence."⁹

The Ninth Circuit affirmed the district court.¹⁰ The appellate court relied on *Frye v. United States*¹¹ and stated that, "[e]xpert opinion based on a scientific technique 'is admissible if it is generally accepted as a reliable technique among the scientific community.'"¹² The court explained, "the methodology cannot diverge significantly from the procedures accepted by recognized authorities in the field."¹³ This decision conflicted with the Third Circuit's in *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*¹⁴

The U.S. Supreme Court granted certiorari to establish the proper standard for admission of expert testimony.¹⁵ The Court explained that a trial judge, when faced with a proffer of expert testimony, must perform a preliminary Federal Rule of Evidence 104 analysis.¹⁶ This involves a two-pronged assessment of

⁸ See *Daubert v. Merrell Dow Pharms.*, 727 F. Supp. 570, 571 (S.D. Cal. 1989).

⁹ *Id.* at 572.

¹⁰ See *Daubert v. Merrell Dow Pharms.*, 951 F.2d 1128 (9th Cir. 1991).

¹¹ 293 F. 1013 (D.C. Cir. 1923).

¹² *Daubert*, 951 F.2d at 1129 (quoting *United States v. Solomon*, 753 F.2d 1522, 1526 (9th Cir. 1985) (citing *Frye*, 293 F. at 1014)).

¹³ *Id.* at 1130.

¹⁴ 911 F.2d 941 (3d Cir. 1990). In *DeLuca*, the Third Circuit examined the same types of evidence (in-vitro studies, in-vivo animal studies, and reanalysis of the epidemiological data) and concluded the district court erred in granting summary judgment in favor of Merrell Dow. The court found the record was insufficient to support a wholesale exclusion of this type of evidence. *Id.* at 959.

¹⁵ See *Daubert v. Merrell Dow Pharms.*, 506 U.S. 914 (1992).

¹⁶ See FED. R. EVID. 104. Rule 104 states:

(a) **Questions of admissibility generally.**

whether the reasoning or methodology underlying the testimony is valid, as well as whether that reasoning or methodology can be applied to the facts at issue.¹⁷ The Court continued, “[m]any factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test.”¹⁸

Unfortunately, the court added “general observations” discussing the hallmarks of scientific validity. The four areas mentioned by the court subsequently became known as the *Daubert* factors. The *Daubert* factors used to determine scientific validity are:

- Whether the theory or technique can be (and has been) tested.
- Whether the theory or technique has been subject to peer review and publication.
- The known or potential rate of error for the theory or technique.
- General acceptance in the scientific community.¹⁹

Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.

(b) Relevancy conditioned on fact.

When the relevancy of evidence depends on the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.

(c) Hearing of jury.

Hearings on the admissibility of confessions shall in all cases be conducted out of the hearing of the jury. Hearings on other preliminary matters shall be so conducted when the interests of justice require, or when an accused is a witness and so requests.

(d) Testimony by accused.

The accused does not, by testifying upon a preliminary matter, become subject to cross-examination as to other issues in the case.

(e) Weight and credibility.

This rule does not limit the right of a party to introduce before the jury evidence relevant to weight or credibility.

Id.

¹⁷ See *Daubert*, 509 U.S. at 579, 592-593.

¹⁸ *Id.* at 593.

¹⁹ See *id.* at 593-94.

Practitioners have struggled with the application of these factors since their publication.²⁰

B. JOINER

Plaintiff/Respondent Joiner worked as an electrician for the City of Thomasville, Georgia for approximately twenty years, holding the title of chief electrician for the last eight years.²¹ As part of his job duties, he worked on transformers fifty percent of the time. In the process of repairing the transformers, he was to open the transformers, drain them of dielectric fluid, heat dry the transformers, and refill them with fresh dielectric fluid. To complete this task, Joiner submerged his hands and arms into the dielectric fluid.

Although dielectric fluid should have been free of PCBs, approximately one-fifth of the transformers were contaminated.²² Joiner, at the age of thirty-seven, was diagnosed with small-cell lung cancer. He brought suit against both the manufacturers of the transformers and the manufacturer of the dielectric fluid. He alleged his exposure to PCBs was at least partly responsible for his development of cancer.

Defendants moved for summary judgment, asserting in part, that Joiner was unable to produce credible admissible scientific evidence that exposure to PCBs, furons, and dioxins caused small-cell lung cancer. Joiner presented testimony by two medical doctors who based their testimony, in part, on the assumption that virtually all of the dielectric fluid Joiner contacted was contaminated.²³ Additionally, Joiner's experts based their opinions on animal studies²⁴ and epidemiological studies.²⁵

²⁰ In dissent, Chief Justice Rehnquist foretold of the problems that precipitated *Kumho* as well as those we still face today. See *id.* at 598-601.

²¹ See *Joiner v. Gen. Elec. Co.*, 864 F. Supp. 1310, 1312 (N.D. Ga. 1994).

²² See *id.* at 1312-13. The transformers manufactured by GE and Westinghouse were tested by the City beginning in 1983. The City tested 2,668 of its transformers. Approximately half of them had PCBs; 2.5% contained levels of PCBs above 500 parts per million and 16.7% contained levels of PCBs above 50 parts per million. The EPA considers transformers with PCBs below 50 parts per million non-PCB transformers. *Id.*

²³ *Id.* at 1321-22.

²⁴ These studies involved direct injection of high doses of PCBs into the bodies of infant mice. The mice developed adenomas, not small-cell carcinoma. See *id.* at 1322-23.

²⁵ The epidemiological studies involved assessment of increased incidence of lung cancer deaths in various worker populations, but no study found the increase in lung cancer statistically significant. See *id.* at 1324-25.

The district court performed a *Daubert* analysis of reliability and relevance.²⁶ The court focused on whether plaintiff's expert testimony "fit" the facts at issue. The court found the evidence that Joiner was exposed to furons and dioxins insufficient.²⁷ Because Plaintiff's experts assumed exposure to furons and dioxins, the court determined the expert testimony did not "fit" the facts of the case.²⁸

The court also examined the studies supporting plaintiff's expert testimony and determined that reliance on these studies was misplaced because there were only two studies and those studies involved massive doses of PCBs.²⁹ Regarding the epidemiological studies, the court examined portions of each study and concluded they did not support the experts conclusions.³⁰ Thus, the court granted defendants' summary judgment.

The plaintiff appealed the decision to the Eleventh Circuit. The Eleventh Circuit reversed the district court and remanded the case.³¹ The court applied "a particularly stringent standard of review to the trial judge's exclusion of expert testimony."³²

The Supreme Court of the United States reversed the circuit court.³³ The Court held that abuse of discretion is the appropriate standard of review.³⁴

C. KUMHO TIRE

Plaintiff/Respondent Patrick Carmichael purchased a 1988 Ford Aerostar Minivan in July 1993. After driving approximately seven thousand miles in the minivan, Carmichael was involved in a single-vehicle accident in which the right rear tire failed, allegedly causing the driver to lose control of the vehicle.³⁵

²⁶ The district court did not apply the *Daubert* factors outlined above. *See supra* text accompanying note 20. Rather, the court focused on a Rule 104 preliminary assessment of whether the methodology was valid and whether the methodology could be applied to the facts at issue. *See id.* at 1320.

²⁷ *See* *Joiner v. Gen. Elec. Co.*, 864 F. Supp. 1310, 1319 (N.D. Ga, 1994).

²⁸ *Id.* at 1322.

²⁹ *Id.* at 1323.

³⁰ *Id.* at 1324.

³¹ *Joiner v. Gen. Elec. Co.*, 78 F.3d 524, 534 (11th Cir. 1996).

³² *Id.* at 529. In support of this standard, the Circuit court cited *Daubert* and *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 750 (3d Cir. 1994). *Id.* Neither case stands for the proposition that a higher standard of review applies to evidentiary rulings involving expert testimony.

³³ *See* *Gen. Elec. Co. v. Joiner*, 522 U.S. 136 (1997).

³⁴ *See id.* at 139, 143.

³⁵ *See* *Carmichael v. Samyang Tires, Inc.*, 923 F. Supp. 1514, 1517-19 (S.D. Ala. 1996). The tire had been on the vehicle for some unknown period of time prior

Plaintiff instituted a products liability action alleging the presence of a design or manufacturing defect in the right rear tire.

Plaintiff employed one expert witness to testify about the product defect.³⁶ That expert was a mechanical engineer who had ten years experience in the field of tire design.³⁷ The court assumed, without deciding, the expert was qualified to offer expert testimony on the subject.³⁸

Plaintiff's expert examined the tire for the first time on the morning of his deposition. His examination was limited to a visual inspection. The district court evaluated the expert testimony utilizing the *Daubert* four-factor test and determined that none of the four admissibility criteria had been utilized.³⁹ The court explicitly rejected plaintiff's argument that *Daubert*-style scrutiny was inapplicable.⁴⁰

On appeal, the Eleventh Circuit was asked to determine whether *Daubert* applied. The Eleventh Circuit reviewed both the trial court's legal decision to apply *Daubert* de novo and evidentiary decision to exclude the expert's testimony for abuse of discretion.⁴¹ The Eleventh Circuit concluded the *Daubert* criteria did not apply; however, the court stated, "the inapplicability of *Daubert* should not end the day regarding [the expert's] reliability. Under Rule 702, it is the district court's duty to determine if [the expert's] testimony is sufficiently reliable and relevant to assist a jury."⁴²

Kumho Tire petitioned the Supreme Court of the United States asking, "whether a trial court 'may' consider *Daubert*'s specific 'factors' when determining the 'admissibility of an engineering expert's testimony.'"⁴³ The Supreme Court responded, "[e]mphasizing the word 'may' in the question, we answer that

to the purchase by Carmichael and had not been replaced. The service history of the tire was unknown and the tread depth at the time of the accident varied between 0/32" and 3/32" inches. *Id.*

³⁶ *See id.* Plaintiff's testifying expert replaced a previously-hired expert. The testifying expert looked at photos taken by the prior expert and adopted this prior expert's report and opinions almost verbatim. The testifying expert did not examine the tire before issuing his report. *Id.*

³⁷ *See id.* at 1518.

³⁸ *See id.* at 1518-19.

³⁹ *See id.* at 1520-21.

⁴⁰ *See id.* at 1521-22.

⁴¹ *See Carmichael v. Samyang Tire, Inc.*, 131 F.3d 1433, 1435 (11th Cir. 1997).

⁴² *Id.* Of course, relevance and reliability are the two factors specifically set forth in the *Daubert* holding. *See supra* text accompanying notes 18-19.

⁴³ *Kumho Tire Co v. Carmichael*, 526 U.S. 137, 146 (1999) (quoting *Kumho Tire* petition for certiorari).

question yes Our emphasis on the word ‘may’ thus reflects Daubert’s description of a Rule 702 inquiry as ‘a flexible one.’”⁴⁴

The Supreme Court also addressed the deference afforded the trial court in evidentiary rulings stating:

Our opinion in *Joiner* makes clear that a court of appeals is to apply an abuse-of-discretion standard when it ‘review[s] a trial court’s decision to admit or exclude expert testimony’. That standard applies as much to the trial court’s decisions about how to determine reliability as to its ultimate conclusion Thus, whether Daubert’s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine.⁴⁵

We, as practitioners, must function within the *Daubert*, *Joiner*, and *Kumho* framework. As such, an examination of the methods by which lower courts have chosen to examine expert testimony is instructive. In aviation litigation, practitioners encounter many experts. Fortunately, a great deal of analysis has been conducted regarding the types of experts we commonly confront.

III. THE EXPERTS

*Houghton v. Port Terminal R.R. Ass’n*⁴⁶ involved Plaintiff Houghton, an engineer employed by the defendant. He allegedly injured his back when the seat “in which he was sitting separated from its mounting as a result of a hard impact from a coupling of the railroad cars.”⁴⁷ Mr. Houghton sued the defendant under the Federal Employers Liability Act (FELA) for negligence, and under the Boiler Inspection Act (BIA). Houghton alleged the brakes and engineer’s seat were not in proper condition. A jury found in favor of the defendant and plaintiff appealed. Plaintiff assigned as error the trial court’s granting of the defendant railroad company’s pretrial Motion to Exclude the Testimony of the Plaintiff’s expert, Charles Colver, on the grounds that Mr. Colver was not qualified to testify on locomotive breaks.⁴⁸

At trial plaintiff sought to have the expert deliver three opinions: “(1) the manner in which the engine seat could become misaligned; (2) the fact that rough coupling of the two cars oc-

⁴⁴ *Id.* at 150.

⁴⁵ *Id.* at 152-53. (citations omitted) (alterations in original).

⁴⁶ 999 S.W.2d 39 (Tex. App. 1999).

⁴⁷ *Id.* at 43.

⁴⁸ *See id.* at 47.

curred in the accident; and (3) the engine breaks caused the rough coupling or contributed to the impact."⁴⁹ The trial judge excluded the expert testimony regarding the rough coupling of the cars. The trial judge allowed Colver to testify as to his opinion regarding the engineer seat, but not as an expert because no expertise was needed to show how the seat became misaligned. With regard to the remaining issue, he was not allowed to testify about his belief that the brakes could have caused the coupling.⁵⁰

The Court of Appeals began by setting forth the standard.⁵¹ The court explained:

[t]he role of the trial court in qualifying experts is to ensure 'that those who purport to be experts truly have expertise concerning the actual subject about which they are offering an opinion.'⁵² . . . General experience in a specialized field does not [necessarily] qualify a witness as an expert. 'What is required is that the offering party establish that the expert has "knowledge, skill, experience, training or education" regarding the specific issue before the court which would qualify the expert to give an opinion on that particular subject.'⁵³ 'And when a party can show that a subject is substantially developed in more than one field, testimony can come from a qualified expert in any of those fields.'⁵⁴

On appeal the court reviewed the expert's experience with engine brakes. Mr. Culver had been employed by Union Pacific Railroad for over twenty years as a welder helper, engineer, and a technical trainer. He did not work "as a switchman, a brakeman, a conductor, yardmaster, trainmaster, a machinist or a mechanic."⁵⁵ Mr. Culver was qualified as an "instructor for operating rules, air brakes, safety, and radio rules" and had received advanced training in freight car, air brake equipment, locomotive air brakes, and electropneumatic equipment through West-

⁴⁹ *Id.* at 48.

⁵⁰ *Id.*

⁵¹ *See id.* at 47. The trial judge fulfilled this obligation by determining as a precondition to admissibility that (1) the expert is qualified as such; (2) the expert's testimony had a reliable basis in the knowledge and experience of the relevant discipline; and (3) the testimony was relevant. *Id.*

⁵² *Houghton v. Part Terminal R.R. Ass'n*, 924 S.W.2d 39 (Tex App. 1999) (citing *Broders v. Heise*, 924 S.W.2d 148, 152 (Tex. 1996)).

⁵³ *Id.* (citing *Broders*, 924 S.W.2d at 153-54 in turn quoting TEX. R. CIV. EVID. 702).

⁵⁴ *Id.* (citing *Broders*, 924 SW.2d at 154).

⁵⁵ *Id.* at 48.

inghouse Air Break Company.”⁵⁶ The court of appeals noted that the record did not reflect Mr. Culver’s experience or advanced training qualifying him to render expert testimony on the specific issues of the case.⁵⁷ This was so, even though, as the appellate court noted, Mr. Culver was self-employed as a consultant to litigators and the federal government. Despite this experience, the *Houghton* court determined that Mr. Culver did not acquire the specialized knowledge with which to testify about the “specific issues within the case, i.e., the effect of flat spots on braking, engine speed, and the forces generated on coupling of railroad cars.”⁵⁸ Thus, the district court’s exclusion of the testimony was proper.

In *Freeman v. Witco Corp.*,⁵⁹ defendant Witco filed a Motion in Limine to limit the testimony of the proffered expert, Louis D. Chauser. Defendant Witco challenged Mr. Chauser’s experience and education, as well as his methodology and investigation of the accident at issue so as to make his conclusions and opinions unreliable.

After citing the *Daubert* standard for admission of reliable and relevant evidence, the court noted that Mr. Chauser did not have a college degree, and was not an engineer, metallurgist, or chemist. Although his deposition testimony indicated that he was an electrician by training, he had no formal education. And, despite the fact that Mr. Chauser was a safety consultant, his investigation of the accident showed he did not visit the Witco plant site where the accident occurred. He did not see any photographs of the location of the accident, did not inspect the King Vac vacuum truck involved in the accident or any photographs of the truck. Mr. Chauser did not inspect any similar trucks except “casually looking at one for ‘no more than a minute.’”⁶⁰ The proffered expert had not examined any drawings or diagrams of the truck and admitted that he had “no expertise or experience regarding carbon disulfide or its properties.”⁶¹ Accordingly, the *Freeman* court determined that he was merely

⁵⁶ *Id.*

⁵⁷ *See id.*

⁵⁸ Specifically the court noted, “the record is silent as to whether Culver’s experience and advanced training qualified him to testify about the effect of flat spots on braking, engine speed, and the forces generated in the coupling of railroad cars or whether he has merely qualified to testify about braking procedures and safety rules.” *Id.*

⁵⁹ No. 97-1448, 1999 U.S. Dist. LEXIS 16124 (E.D. La. Oct. 15, 1999).

⁶⁰ *Id.* at *4.

⁶¹ *Id.*

qualified to testify about breaking procedures and safety rules. The testimony of Mr. Chauser regarding the accident was not sufficiently reliable and was excluded.

*Comer v. Am. Elec. Power*⁶² involved a plaintiff who owned a house in West Winchester, Indiana, which was supplied electricity service by the defendant American Electric Power. The wires providing the electricity were connected to a transformer and secondary conductor located on a utility pole in the northwest corner of the plaintiff's property. Two wires (described as "hot"), which transported 120 volts each, ran from the transformer into the panel distribution box where the two "hot" wires were protected by insulation. The court noted that the typical service rating for the insulation was 600 volts.

On February 4, 1996, a fire occurred at the plaintiff's residence resulting in \$141,980.40 in damages. The record reflects that the chief of the Winchester Fire Department testified at trial that the fire originated in the panel distribution box inside the plaintiff's garage. The proffered expert, Dr. Nine, testified that the two hot wires failed causing electricity between the unprotected wire and metal door to "arc." Both witnesses agreed that this condition burned holes through the door of the panel box and caused the garage to catch fire. The evidence indicated that around the time of the fire, neighbors also using the plaintiff's transformer experienced electrical problems, specifically damage to electrical appliances such as garage door openers, video game systems, televisions, VCRs, answering machines, and washing machines.

Dr. Nine explained the process of "arcing" as "a phenomenon in which electricity passes through the air that has been ionized, and when that happens, you get heats that are in excess—well they're thousands of degrees. And in arcing, that's always accompanied by the melting of metal, even steel, and steel takes several thousand degrees to melt. So arcing is a high temperature phenomenon. . . ."⁶³

The witnesses disagreed about the cause of this arcing condition. Dr. Nine testified that a high voltage phenomenon of some sort caused damage to the protective insulation on the wires in the panel distribution box. The chief of the fire department disagreed and attributed the arcing to defects in the wires within the panel distribution box rather than abnormally high voltage.

⁶² 63 F. Supp. 2d 927 (N.D. Ind. 1999).

⁶³ *Id.* at 932 n. 5.

The testimony of Dr. Nine was challenged as to reliability and relevancy.

With regard to reliability, the defendant challenged Dr. Nine's lack of personal knowledge, as well as the fact that there were obvious discrepancies between Dr. Nine's deposition and his testimony offered at trial. The testimony offered at trial indicated that, in his opinion, a voltage surge occurred on February 4th that immediately caused the insulation on the wires in the panel to fail. This, in turn, led to arcing between the exposed wires and the metal panel distribution box causing the fire. But the deposition testimony was quite different. Specifically, the deposition testimony reflected that any damage was not sufficient at the time of the power surge to cause an immediate breakdown of the insulation, but instead occurred over a period of two days.

The court noted the "glaring temporal discrepancy"⁶⁴ between the deposition testimony and that offered at trial. The court concluded that this discrepancy revealed that the expert did not have any particular fact or observation on which to base the testimony, but instead was only told at what time the fire occurred.

The defendant also challenged Dr. Nine's conclusion that a "loose neutral" caused the power voltage surge, which, in turn, caused the fire. Dr. Nine testified that the neutral came loose at a connection and that the neutral could not have been broken because the other homes that were served by the transformer had electrical power the day after the fire. However, the court noted that there was no basis in the record to support the "loose neutral" conclusion and, in fact, that the evidence indicated the opposite. A review of the record indicated that a service call, on February 6th regarding the same transformer and the power utility lines, pertained to a broken neutral, not a loose neutral. When challenged on cross-examination, Dr. Nine acknowledged that he had no first-hand knowledge that the neutral was loose, but countered by saying that the neutral *could have been loose*. Even Dr. Nine characterized the opinion as a "supposition based on the events."⁶⁵ The court concluded that Dr. Nine's opinion was a conclusory supposition and not based on specific facts presented from the record. This testimony was not sufficiently

⁶⁴ *Id.* at 935.

⁶⁵ *Id.* at 936.

supported so as to be admissible under Federal Rule of Evidence 702 or *Daubert*.

The defense also challenged Dr. Nine's contention that there was an equipment problem in the distribution substation. In a supplemental report following his deposition, Dr. Nine opined that the probable cause for the voltage surges was an equipment problem in the distribution substation. Yet he admitted at trial that there was no evidence to support his conclusion. In fact, Dr. Nine reviewed various weather, fire, and police incident reports to determine if any such incident could have caused the alleged surge. Despite the fact that there were no such reports and no other facts on which to determine what caused the voltage surge, Dr. Nine nonetheless offered this unsubstantiated opinion. Concluding the liability portion of the decision, the *Comer* court determined that the expert opinion offered by Dr. Nine was "generally lacking in factual support, sometimes inexplicably contradictory, and occasionally devoid of any plausible rationale."⁶⁶ Ultimately, this opinion was nothing more than subjective belief without factual support or a technical/scientific foundation.

With regard to relevance, the court determined that even assuming *arguendo* that Dr. Nine's testimony was reliable, it was not relevant to the inquiry at hand. The central issue that the jury would determine was a matter of state law, i.e., whether the defendant was liable for the fire because the electricity supplied to the plaintiff's house was "in defective condition, unreasonably dangerous to the consumer or user."⁶⁷ The court determined that Dr. Nine's testimony did not assist the jury in determining whether the electricity supplied by the defendant was unreasonably dangerous.⁶⁸

⁶⁶ *Id.* at 938.

⁶⁷ *Id.* at 939.

⁶⁸ See *Comer*, 63 F. Supp. 2d at 939. The court reviewed Indiana law to determine what standards were considered, noting that some courts apply the consumer expectation test to electricity such that they developed a general rule that electric voltage is dangerously defective when far in excess of the level intended by the utility. The court cited generally *Bryant v. Tri-County Elec. Membership Corp.*, 844 F. Supp. 347, 350 (W.D. Ky. 1994) ("electric voltage is dangerously defective when it is far in excess of the level intended by the utility and expected by the customer"). See also *Pierce v. Pacific Gas & Elec. Co.*, 212 Cal. Rptr. 287, 287 n.1 (*1985) ("It goes without saying that 7000 volts was far in excess of [defendant's] intended result and in excess, as well, of plaintiff's reasonable expectations."). The court also noted electricity is not necessarily defective when a voltage variance occurs and when such variance is minimal or when the homeowner is in a better position to control the variance. See *Bryant*, 844 F. Supp. at

The court reviewed Indiana law to determine that Indiana's standard for obtaining property damage in products liability actions was limited to "sudden and major" damage. Under the applicable statute, major is defined as greater in number or extent, notable or considerable in effect or scope, or involving grave risk, which the court noted denotes some qualitative relationship, either in number or extent, to the damage. Looking to Dr. Nine's testimony, the court determined that it did not assist the jury in determining whether the electricity supplied was unreasonably dangerous. Specifically, the court noted that Dr. Nine testified the level of voltage was identical for all five houses serviced by the transformer with the allegedly loose neutral. The only explanation offered by Dr. Nine was that the insulation protecting the wires running to the plaintiff's house was weaker than that running to the other four houses. The court determined that this supposition testimony did not assist the jury in determining whether the electricity was unreasonably dangerous, much less tending to prove the same. The court concluded that Dr. Nine's testimony was properly stricken, should have been excluded from the jury's consideration, and that the Motion for Judgment as a Matter of Law was warranted.

In *Nemir v. Mitsubishi Motor Sales of Am. Corp.*,⁶⁹ the plaintiff brought suit against Mitsubishi Motor Corporation and Chrysler Corporation alleging a defectively designed seatbelt. Plaintiff alleged that while driving his car southbound on a two-lane road in Maryland, he lost control of the car and swung out to the right. Plaintiff Nemir suffered several injuries when he was thrown from the driver's seat into the back seat where he struck his head on a pillar in the rear right of the vehicle. Nemir filed suit alleging that the seatbelt was defectively designed. He retained an expert that did tests to demonstrate that Nemir's seatbelt could have suffered from a defect called "partial engagement." It is this expert testimony that the defendants challenged. Specifically, defendants contended that the plaintiff failed to present any evidence demonstrating that partial latching actually occurred in this case. Further, they contended that the results were unreliable for various reasons including: the

350 ("opining that 500 volts might not be unreasonably dangerous because currents up to 600 volts could be controlled most economically by the homeowner"); *Elgin Airport Inn, Inc. v. Commonwealth Edison Co.*, 432 N.E. 2d 259 (holding that the electricity provided was not unreasonably dangerous when the voltage surge was only minimal).

⁶⁹ 60 F. Supp. 2d 660 (E.D. Mich. 1999).

methods employed, the fact that sample buckles were obtained from salvage yards, the fact that one latch plate was used for the several buckles during the testing, and the expert's failure to record the details of the test.

In reviewing the expert's testimony for reliability, the court indicated that the plaintiff must demonstrate the methods used were representative of actual use. Otherwise, facts generally regarding seatbelts would not assist the jury in deciding the facts of a particular case.

The court ultimately determined that the expert's methods were not representative of the actual use of the seatbelt. Specifically, his methods to achieve the partial latch or engagement were too purposeful and painstaking in their manipulation of the buckle. The court considered that actual seatbelt users do not undertake such efforts to achieve the partial latch.

Additionally, the expert's basic expertise was challenged. The court determined that his experience did not extend beyond seatbelt design and testing. The court noted that the expert's tests involved careful manipulation of the buckle and could not be approximated by inadvertence.

With regard to the issue of reliability, the court determined that the expert's theories failed to meet the *Daubert* framework. Initially, the court noted that he did not record all of his testing procedures, but rather recorded only the numerical results of his test. This left the sole source of information as to the manner in which the tests were conducted to his own "after-the-fact" account of what happened. The accuracy of these tests turned upon his ability to recall precisely what occurred during the tests. Further, his recollection was incomplete as to at least one issue.

The court made two initial conclusions based on these facts. Even if the methods were relevant, the results did not indicate that partially engaged buckles (on the TK52 series buckle) were defectively designed or that they violated the federal motor vehicle safety standards, as the tests and results were well within the five pounds allowed under the federal standard. Rather, it was only when the calculated maneuvering of the seatbelts took place that the expert began obtaining results of the partial latch theory.

The court next considered the testability of the expert's theory. Applying his theory to a simple example of empirical testing to reproduce what actually occurred, the court determined that there was in fact no physical evidence of any damage or undue

wear to the buckle to prove that any partial latching occurred. Further, the court noted that there was no way to test the expert's own hypothesis or testing, either by empirical testing or otherwise.

The court then considered the peer review and publication aspects of the *Daubert* inquiry. Noting that the lack of peer review is not always dispositive as to the issue of admissibility, the court acknowledged that there was no peer review or scrutiny by the scientific community with regard to this expert's theory.

The court next addressed the potential error rate from his testing. The court's first observation was that the expert's use of several different buckle mechanisms (most of which were collected from a salvage yard) as applied to only one switch plate may have injected an unknown error rate into the tests. The court then considered the issue of general acceptance, and specifically noted that while partial engagement or latching is referred to by the federal motor vehicle safety standards, there was no proof that the expert's methods of testing these latches was generally accepted. In so far as the federal standard required testing to be done by any means that is representative of actual use, the methods employed by him were not so. Ultimately then, the court concluded the expert's testimony was neither reliable nor relevant. Specifically, the court concluded that his determination that the buckle was not defectively designed, but rather was defective because it took an unreasonable amount of force to separate the buckles, was somewhat different than the defect asserted by the plaintiffs. Without the testing, plaintiff could not prove the alleged defect.

*Culbertson v. Freightliner Corp.*⁷⁰ is a case in which the proffered expert was well educated, but the court determined there was not enough proof to allow the testimony. The plaintiff, Sam Culbertson, claimed to have suffered back injuries when his tractor seat bottomed out as he drove over uneven portions of a highway. He claimed this injury was the result of a defect in the seat of the tractor he was driving for defendant Freightliner, but presented no evidence except that of his expert witness. The expert was a mechanical engineer and was offered to support plaintiff's testimony for his claims of design defect and failure to warn.

The court determined that the proffered expert testimony was unreliable, and in doing so adopted a summary by the de-

⁷⁰ 50 F. Supp. 2d 998 (D. Nev. 1999).

fendants of portions of the deposition testimony. Specifically, the proffered expert: (1) had never given expert testimony with respect to the functioning of air ride seats or of the suspension of a tractor as it related to an air ride seat; (2) had never been involved in the design or modification of the suspension of an air ride seat; (3) had never seen the seat in question; (4) had never reviewed the maintenance records of the seat in question; (5) did not review the deposition testimony of any of the witnesses in this case, including that of the plaintiff or the plaintiff's employer; (6) spent only one hour looking at the tractor in question without the seat at issue; (7) did not perform any tests; (8) did not review any literature or texts in preparation for any of the opinions developed in the case; (9) did not prepare any reports or correspondence relating to the case; (10) had no scientific, mechanical, or other data to back up the opinion; (11) did not cite any industry standards, manufacturing data, outside studies, documentary research, published articles, or treatises that would support his position; and (12) did not run a control group or conduct other research.

The court determined that the opinion was merely conclusory and failed to provide facts to support it. It also noted that although affidavits of other experts supported the principals employed by the expert in that they were consistent with standards of mechanical engineering, this opinion was educated at best, and did not provide specific facts so as to assist the jury in determining the issue at hand.

In *Pillow v. General Motors Corp.*,⁷¹ plaintiff alleged that the brake system of her 1988 Chevrolet van failed, which caused her to suffer ankle injuries when her van collided with the rear end of a pickup truck. Specifically, Pillow complained the brakes were defectively designed and that the crush space in the front driver's side of the van was also defectively designed, such that it caused the brake pedal to be violently thrust toward the driver's right foot whenever the van made contact or impact with the rear of another vehicle. To support this contention, plaintiff proffered an expert to testify that the design of the master cylinder and brake system was defective because it allowed forces placed on the master cylinder to transmit to the brake pedal. General Motors moved to exclude the testimony arguing that it was neither relevant nor reliable.

⁷¹ 184 F.R.D. 304 (E.D. Mo. 1998).

Agreeing with General Motors, the court determined that because the expert did not conduct an independent crash test of the model, his theory had not been adequately tested. According to the court, the expert relied on a video taped crash test. This taped test was too different from plaintiff's crash to be sufficiently reliable. Specifically, the court noted that the video taped crash test showed a man striking a fixed and immovable barrier at a speed and angle different from the accident at issue. These were not a sufficiently similar set of facts to prove the opinion proffered. Ultimately, the court determined that this testimony consisted of mainly untested and unsubstantiated opinions. Additionally, the court noted that the theories of the expert had not been subjected to peer review and that there was no known error rate. The expert testimony was therefore excluded.

In *Jarvis v. Ford Motor Co.*,⁷² the plaintiff was seriously injured when the 1991 Ford Aerostar she was driving suddenly accelerated after being started. The van traveled 330 feet, eventually crashing into a drainage ditch. The plaintiff testified that she attempted to stop the vehicle by stepping on the brake pedal with both feet.

Plaintiff proffered the testimony of Mr. Sero. Mr. Sero proposed to testify about three conditions under which the van could have accelerated from the stationery position without the driver engaging the accelerator or the cruise control. Ford moved to exclude the testimony as unreliable.

Mr. Sero had three theories regarding how the car could have accelerated so suddenly: (1) if a ground connection to the speed amplifier is opened and removed, and either the vacuum wire or vent wire is grounded; (2) if both the vent and vacuum wire are grounded at the same time; or (3) if an injected signal on or into the amplifier fires the output transistors. The expert considered the possibility of sudden acceleration resulting from an electrical fault that causes a "completion of the electrical circuit from the car's battery to the cruise control."⁷³

The expert offered two solutions or options that might have prevented the sudden acceleration. The expert believed that the problem could be solved by: (1) installing of an on/off switch on the cruise control that would allow power only when the

⁷² 69 F. Supp. 2d 582 (S.D.N.Y. 1999).

⁷³ *Jarvis v. Ford Motor Corp.*, 1999 WL 461813, *4 (S.D.N.Y. July 6, 1999) (Magistrate Judge's Memorandum and Order).

cruise control was in use; or (2) installing of a device that would sense a grounding problem and immediately stop the acceleration.

Ford contended that the testimony of the expert was unreliable in that his propositions had not been physically verified in an actual vehicle, had not been submitted for peer review, had not gained general acceptance in the engineering community, and had not been subject to a statistical analysis. Furthermore, Ford asserted these propositions were refuted by a 1989 report by the National Highway Traffic and Safety Administration.

The district court concluded that the expert officially tested and replicated the first two of his theories on a model automobile that accurately reflected the electrical components that were available in the 1991 Ford Aerostar. The court properly noted that although the findings have not been published or subject to peer review, that alone did not render them unreliable. The court went on to find that the expert's approach characterized as a "failure mode analysis" lacked support from the engineering community. The judge acknowledged that the findings were subject to criticism, but that such criticisms are "directed at conclusions that can be drawn from Sero's findings rather than his methodology."⁷⁴ Additionally, the court indicated the reliability of the expert's findings was confirmed by Ford's own internal documents that showed Ford considered such a cruise control problem. This testimony was properly admitted.

In *Guild v. General Motors Corp.*,⁷⁵ the plaintiff Carol Guild claimed her 1987 Oldsmobile Cutlass was not crashworthy in that it was equipped with defective and unsafe seatbelts. Specifically, she alleged that the seatbelts were defective, dangerous, and unsafe because certain crash settings and inertial forces generated during a collision caused the seat belt to release and subsequently unlatch. Plaintiff claimed that in 1993, while wearing her seatbelt, she collided with another automobile. Despite wearing the seatbelt, she suffered serious injuries.

The parties filed several pretrial Motions in Limine. Specifically, General Motors contended that the testimony of plaintiff's proffered experts, Dr. James Pugh and Dr. Malcolm Newman, was unreliable and not scientifically valid.

⁷⁴ *Id.* at *6.

⁷⁵ 53 F. Supp. 2d 363 (W.D.N.Y. 1999).

The court first considered their qualifications. Dr. Pugh had a Ph.D. in biomedical engineering and obtained a Bachelor of Science in metallurgy and materials from M.I.T. The court noted that Dr. Pugh was currently the director of biomedical engineering, metallurgy, and materials science of Inter-City Testing and Consulting Corporation. Dr. Newman held degrees in civil engineering from the City College of New York and Columbia University, and an engineering science degree from New York University. Dr Newman was the president and consulting engineer of biomedical engineering, metallurgy, and materials science of Inter-City Testing and Consulting Corporation. Both experts published technical articles in engineering and scientific journals, and had previously served as expert witnesses.

The court then considered the theories proffered by the experts. "Inertial release" is a theory that has its grounding in principals of science and of physics. It was formed on the basis of a number of studies and tests, including extensive testing by N.H.T.S.A. and by General Motors itself thus, it was not a novel theory developed by plaintiff's experts.

The experts conducted several tests and made their conclusions on many factors. Specifically, Dr. Pugh indicated his report and deposition testimony was based in medical records, medical images, witness statements, reports, and copies of photographs depicting the plaintiff's vehicle at the time of the accident. Dr. Pugh also reviewed photographs showing the contusion damages to the plaintiff's body. He inspected the vehicle, the accident scene, and met with family members. Similarly, Dr. Newman reviewed deposition testimony, witness statements, copies of photos depicting the vehicle, and various reports concerning the accident.

General Motors asserted that plaintiff's experts' reliance on the slap test was unreliable. The court noted however that the slap test did not form the entire basis of the experts' opinion.

Plaintiff asserted that both expert opinions were based on engineering drawings and specifications for the plaintiff's vehicle involved in the accident. With regard to the force required to release a seatbelt mechanism, the experts used several U.S. patents, the slap test, and other information provided during discovery from General Motors, including car crash tests, frontal impact sled tests, General Motors memoranda, and prior customer complaints regarding the unlatching of the buckle.

The court considered the fact that experts for both parties came to different opinions regarding the cause of the accident

or the cause of plaintiff's damages. The court noted that although both experts cited to a number of studies and reports, such differences of opinion will go to the weight to be given to the expert testimony by the jury, not its admissibility. The court concluded that there was sufficient evidence in the record to indicate plaintiff's experts had extensive experience and education in the fields in which they proposed to testify, and there was a reasonable basis to believe their testimony would be helpful to the jury in assessing the plaintiff's allegations against General Motors.

The Tenth Circuit Court of Appeals addressed the issue of proffered experts as general versus specific in *Kinser v. Gehl Co.*⁷⁶ The plaintiff, Mary Kinser, on behalf of herself and her deceased husband's estate, filed a products liability action against Gehl Company alleging strict liability for manufacturing and selling an unreasonably dangerous product, negligent design and manufacture, and breach of implied warranty (not fit for its intended use).

The claim arose from an accident on August 17, 1994. The decedent, Tim Kinser, operated a farm in Jennings, Kansas. While baling alfalfa with his Gehl model 1817 Big Round Baler, Kinser became entangled up to his waist in the compression rollers of the baler's feed intake unit. A witness on the scene noted the tractor's engine was on and the power take-off device, which transmits power from the tractor to the bailer, was still engaged. The witness turned off the machinery and attempted to assist Kinser in extricating him from the baler. The witness obtained assistance from another farmer and used bumper jacks and an acetylene torch to free Kinser. He was pronounced dead within thirty minutes of his arrival at the hospital.

Much of the subsequent trial focused on the designs of the Big Round Baler. Prior to trial, defendant Gehl challenged the qualifications of plaintiff's expert witness and requested a *Daubert* hearing to assess the reliability and relevance of the proffered testimony. Under precedent at that time in the Tenth Circuit, *Compton v. Subaru of America, Inc.*,⁷⁷ the district court was not required to hold a *Daubert* hearing. The court of appeals noted the review then would be difficult, as determinations under a *Daubert* analysis are usually examined only for abuse of discretion. Having no findings to review, the court decided to

⁷⁶ 184 F.3d 1259 (10th Cir. 1999).

⁷⁷ 82 F.3d 1513 (10th Cir. 1996).

review the entire record, including the testimony presented at trial.

The plaintiff proffered an expert who held a bachelor's degree in mechanical engineering, a doctorate in industrial engineering, and had taught classes on product design ergonomics. He served as a consultant for agricultural manufacturers in litigation on various occasions by analyzing the adequacy of warning instructions on certain farm equipment. He had also published related articles.

Despite these credentials, the court determined the expert was not qualified to testify as an expert in the areas of possible alternative design. The court cited the expert's own acknowledgment that he had no practical experience in mechanical design. The court noted that he had no expertise with regard to design of products under traditional engineering methods, had never published a paper examining any type of agricultural equipment, never operated a Big Round Baler, and never consulted on behalf of a plaintiff or manufacturer regarding Big Round Balers. Additionally, the court noted that the expert did not speak with any individual regarding their experience with Big Round Balers, save reviewing deposition testimony of those involved in this case. Additionally the court considered the expert's testimony, where he conceded the recommended changes in the 1870 baler design were merely concepts, neither developed nor tested with regard to feasibility or safety.

Plaintiff's second expert had a bachelor's degree in mechanical engineering and at the time worked for a forensic engineer at his own consulting firm. He focused on product and vehicle accident reconstruction. He did not, however, attempt to reconstruct Kinser's injuries. To prepare for his testimony, the expert reviewed the depositions of several farmers, took measurements of and observed the repaired 1870 baler, and examined industry standard publications in various baler manufactures' operator's manuals. The second expert acknowledged that he had never designed a piece of agricultural equipment or even operated a similar baler. Additionally, he conceded that he had not adhered to the generally accepted engineering methodology before testifying on possible design changes for the baler. Essentially, the expert reviewed the "production run of similar guarding utilized by John Deere."⁷⁸

⁷⁸ *Kinser*, 184 F.3d at 1272.

Analyzing these qualifications, the court noted that several circuits suggested the testing of alternative design proposals as a critical component of the reliability of an expert's opinion. While hands-on testing is not an absolute prerequisite, the reliability of proposed design changes would be increased. The court concluded with regard to the experts that both opinions lacked the adequate foundation of reliability.

However, their opinion as to the guarding or safety mechanisms was proper. Citing substantive state law in Kansas, a significant factor in determining due care with regard to design of a product is whether others in the industry use the same design, or a safer design. Thus, the testimony by the experts referencing John Deere standards was appropriate. The court concluded that any error was harmless and that the Motion for a new trial was thus unwarranted.

In *Jaurequi v. Carter Manufacturing Co.*,⁷⁹ plaintiff Juan Jaurequi brought a diversity action against the John Deere Company alleging that design and warning defects associated with a John Deere corn head, or combine, caused an accident in which Jaurequi's legs were amputated. Prior to trial, John Deere moved for the exclusion of the plaintiff's proffered expert testimony.

The plaintiff, Juan Jaurequi, was an employee of Texas Triumph Seed Company when the injuries giving rise to the suit occurred. The combine at issue in the case was manufactured and sold by John Deere in 1974. In 1986, Carter Manufacturing acquired the used combine on behalf of Texas Triumph. Carter reconstructed a special unit out of a 1961 Massey Harris combine to be specially suited for harvesting small test plots of corn. That new combination of combines was good only for a research plot of corn. John Deere was never informed or consulted with regard to the additions or modifications to the unit.

On the day he was injured, the plaintiff, along with other employees, was using the modified combine to harvest milo/sorghum. The unit had not been constructed with this use in mind and was incapable of harvesting standing milo. Instead, the workers would hand pick the milo, stand next to the operating machine, and dump the bags onto a cross auger at the rear of the corn head at a point behind the combine. This was necessary because Texas Triumph neglected to bring its harvester to the test plots. On the day of the accident, the plaintiff was per-

⁷⁹ 173 F.3d 1076 (8th Cir. 1999)

forming similar tasks with regard to the milo and the operating machine. The plaintiff was warned twice by a co-worker that he should not feed the corn head from the front because he risked being pulled in by moving parts. On one such occasion he moved too close and his legs became entangled in the machinery. Plaintiff sustained severe injuries to both legs leaving him a double amputee.

Plaintiff proffered two experts, Terrence Willis and Harold Wakely. Willis was a mechanical engineer and was prepared to testify the Jaurequi was not provided the necessary details that would identify where the hazard zone ended and the safety region began, and that such specific information cannot be determined visually because of the speed at which the gathering chains suddenly emerged from under the snout end of the machines. Willis opined that although the motion of the gathering chains of the machinery was open and obvious, the risk was not obvious at the point at which the plaintiff was standing. The area where gathering chains and hooks emerged was invisible, according to Willis, because the chains and hooks moved so fast. However, Willis admitted that he had never observed the combine at issue when it was running and that he had never seen a corn head combine in operation except from the roadside during his various trips through the Illinois country side. The basis of his opinion was stated as simply, "I guess as an engineer, I know what it looks like in the running mode."⁸⁰

Willis also believed that the combine should have been equipped with a larger and more prominent warning. In addition, Willis proposed a plastic cover snout area colored with black and yellow stripes. He speculated in an affidavit that the warnings, had they been designed as he suggested, would not have been painted over. However, he admitted that he had no basis for this belief.

Furthermore, in his affidavit, the proffered expert Willis stated that Jaurequi was not warned of the specific hazards of operating in the zone in front of the combine. However, in his deposition, Willis admitted that he had not evaluated the plaintiff's behavior and focused his analysis on the question of whether the mechanical design of the corn head combine was defective. Willis admitted that he did not know what the plaintiff knew or did not know.

⁸⁰ *Id.* at 1080.

Willis also proffered the opinion that John Deere should have incorporated "awareness barriers" into the combine. He again opined that these barriers would create safety and would not interfere with the operation of the machine. He admitted, however, that he had not studied the feasibility of such barriers nor designed and tested such barriers. He further admitted that he was unaware of any such studies indicating the effectiveness of these barriers. And he had never before designed any barriers of this kind. Finally, Willis admitted that he was aware of no manufacturer of these combines who had ever used barriers in front of the gathering area as he proposed could be done.

The court evaluated the proffered testimony in light of *Daubert* and *Kumho*. The court noted specifically that Willis had not attempted to construct or draw the suggested devices, much less test the utility of the safety devices or their compatibility with the combine. The court took note that no manufacturer incorporated these "awareness barriers" into their corn head combines or other similar farming machinery. The court determined that Willis provided no basis to believe his testimony. His opinions were nothing more than "unabashed speculation."⁸¹ The court determined that the district court did not err or abuse its discretion by excluding the proffered testimony regarding the lack of awareness barriers.

Harold Wakely, the second proffered expert, was a human factors engineer who held a doctorate in experimental psychology. Wakely was prepared to testify that the combine was defective because the original warning signs were too small, too far from the point of danger, and oriented at an angle that made it difficult for them to be read. Wakely was prepared to testify that the warning did not emphasize the precise point at which the danger was concentrated. However, he admitted that he had never read the original warnings and did not know what the original warnings actually said. Nonetheless, Wakely opined that the alternative warnings were necessary because the gathering hook on the gathering chain was not visible at any time of danger. Wakely submitted an affidavit in which he stated that although the plaintiff had been warned by his co-workers of the general dangers associated with the combine, he was not aware of the exact location of danger.

Wakely admitted that he found no product of any kind or vintage that employed the types of warning stripes he suggested.

⁸¹ *Id.* at 1084.

He speculated in his deposition that John Deere could have made the protection snouts of plastic and that this might have made it difficult to paint over any warnings. When pressed, he admitted that he had no basis for saying how long or if paint would stay on that plastic snout protection. In the affidavit, Wakely stated that the high contrast plastic snouts and warnings used by Hege and New Idea since 1964 would have produced a more effective warning. In a subsequent deposition however, Wakely admitted he had no knowledge of those protective snouts being used on combines at or before the time that the combine at issue in this case was manufactured.

Again, the district court reviewed Wakely's proffered testimony in light of the *Daubert* and *Kumho* holdings. The court concluded that the testimony offered by Wakely appeared unreliable in that the proffered expert had never designed or created a warning device like he suggested. In fact, Wakely admitted he had never even read the warnings that John Deere employed. Additionally, the expert pointed to no other manufacturers of farm machinery that were employing these measures.

Finally, after considering the proffered testimony for its reliability, the court considered the issue of relevance. The court noted that while it was undisputed that the combine's warning had twice been painted over by persons other than John Deere, neither expert had a basis for concluding that warnings they proposed "would have escaped either painter's brush."⁸² But the inadequacies of the content could not be considered a cause in fact of the plaintiff's injuries. As such, the proffered testimony was not relevant to the inquiry at hand.

*Hammond v. Coleman Co.*⁸³ was a products liability suit alleging defective design of a lantern, manufacturing defects in the lantern, and inadequate warnings and instructions as to the use of a lantern. The plaintiff David Hammond filled a Coleman lantern with fuel on the outside of his mobile home and then pressurized the lantern with approximately 30 pumps-per the instructions. Hammond carried the lantern into his home and lit it, whereupon he alleged that an initial burst occurred and then a second burst or explosion in which he was allegedly hit with fuel from the lantern. Plaintiff suffered second and third degree

⁸² *Id.*

⁸³ 61 F. Supp. 2d 533 (S.D. Miss. 1999).

burns and the total destruction of his mobile home as a result of the accident.

Plaintiff proffered Alvin Kirk Rosenhan as his only expert. Defendant challenged this expert asserting his impressions and opinions should be excluded because of relevancy and reliability.

The plaintiff testified he was attempting to light the lantern when a pop and then a bigger second pop occurred when the lantern exploded. At some time during the lighting, he alleges liquid fuel squirted from the lantern onto his body and was ignited when the lantern exploded. Based on this testimony, Rosenhan opined as to three possible causes of the alleged squirting of fuel: (1) the screw-on cap; (2) the control knob or dip tube mechanism through which the fuel came out of the reservoir; and (3) the air pump that is used to pressurize the fuel and make the lantern work. Rosenhan's testimony indicated that it was his opinion that the air pump mechanism was the most likely cause of the explosion.

The expert examined the burned lantern as well as a new lantern. He determined the pump components appeared to be intact and the aluminum knob on the end burned off. He ultimately concluded that the squirt of fuel had to be related to a defect in the air pump. However, he never specifically identified any defect in the lantern pump nor did he do any tests that confirmed or recreated a defect in the pump.

Upon review, the court noted that the expert offered nothing more than the plaintiff's testimony to support his opinions. In fact, the court noted that Rosenhan never gave an opinion as to what happened. The court determined that Rosenhan's proffered testimony was merely a repeat of what the plaintiff had indicated happened with the lantern and, as such, was not helpful to the jury. Additionally, the court noted that the testimony was speculative in that no defect was identified. Further, the expert never considered the cause in terms of probability, only possibilities, and he did not attempt to simulate or re-create the incident with tests or accident reconstruction. Additionally, the court noted that the plaintiff's proffered expert had never testified in a lantern case.

The court considered specifically the three options offered by the proffered expert as to the cause. Dr. Rosenhan himself indicated that the first thing he would do would be to check the air pump. However, he admitted that he made no attempt to see what was inside of the air pump itself. Furthermore, when ques-

tioned about other alternatives, the doctor could not rule out the possibility that a similar explosion would have occurred without a cap when near a match or something flammable. Additionally, the court noted that the plaintiff or his expert had not established any previous failures by Coleman lanterns in the manner alleged to have occurred.

The expert assumed the testimony of the plaintiff to be true without conducting adequate testing or re-creation of the accident. Also, he offered no feasible alternative design with regard to the defect. Additionally, the plaintiff could not offer testimony, nor could the expert establish the lantern was in substantially the same condition as when it left the factory. Thus, the expert offered nothing sufficient for a jury to determine "that it was more probable than not that the carton immediately prior to the accident was in substantially the same condition as when it left the hands of [the seller]." ⁸⁴ In conclusion, the court determined that the testimony offered was too speculative to be admissible under rule 702, was not helpful to the jury, and had no reliable basis, such that the testimony should be admitted.

Oglesby v. General Motors Corp. ⁸⁵ was a case that illustrated how the basis for an expert opinion could not be assumed and how the court will review the thoroughness of the expert's review of the facts presented in the case. *Oglesby* was a products liability action against General Motors Corporation alleging negligence, breach of warranty, and strict liability. Plaintiff alleged that while leaning into the engine compartment of a Chevrolet Silverado pick-up truck to adjust a transmission cable, a radiator hose detached, causing Oglesby serious burns. Plaintiff alleged specifically that the injuries were caused by a defective plastic hose connector between the radiator and the radiator hose.

General Motors challenged the proffered expert testimony of the plaintiff. The district court excluded the testimony and the appellate court affirmed.

The facts in this case are of particular significance. In 1991, Blaine Nielson purchased a used 1988 Chevrolet Silverado pick up truck. Within the first years after purchasing the truck, Nielson had to overhaul the engine and rebuild the transmission. At the same time, he removed the radiator, cleaned and flushed it, and replaced the radiator hose. In 1995, when the truck had approximately 156,000 miles, the engine began to experience

⁸⁴ *Id.* at 541-42.

⁸⁵ 190 F.3d 244 (4th Cir. 1999).

difficulties. It was at this time plaintiff Oglesby, a certified mechanic, completely rebuilt the engine with his friend Nielson. During this repair, they replaced the thermostat, removed and cleaned the radiator, and replaced one of the hose clamps. Within two weeks of this repair, the transmission began to experience more difficulties. Nielson and Oglesby decided to adjust the transmission detent cable which causes a transmission to change gears. To do this, Oglesby stepped on the driver's side front bumper, leaned into the engine compartment and reached down toward the engine's firewall where the cable was located. According to Nielson, Oglesby was kneeling inside, reaching to adjust the linkage. Apparently, as Oglesby leaned down to adjust the cable, the radiator hose released and sprayed hot coolant on him, severely burning his torso from the waste down to his legs. Following the incident, Nielson reattached the radiator hose and continued driving the truck. It was two months later in September of 1995, when Oglesby's attorney inspected the radiator and discovered a broken piece of the plastic connecting the radiator hose.

The plaintiff presented a former professor of medical engineering at Clemson University, as a potential expert witness. The expert had previously consulted in cases regarding mechanical engineering and safety of various industrial products, but he had no particular experience in evaluating automobiles or various plastic automobile components.

In preparing his expert opinions, the expert looked at the broken plastic connector and the piece that broke off, took physical measurements of the connector, and photographed the parts. This was the entirety of his investigation into the part or its manufacturer. He found that the connector was not circular, but flattened in shape. He noted a difference between the dimensions as well. However, the expert did not know or learn how the part was manufactured or from what material it was manufactured. He did not know of any specifications prescribed for the part, and did not perform any tests or calculations to determine the strength of the part or the stresses to which it was repeatedly subject. Nonetheless, the expert concluded the out-of-roundness of the upper hose connector was apparently a manufacturing defect. Two probable causes of the out-of-roundness were recognized. One was that the upper connector was manufactured flat. According to the expert, this was most unlikely considering the hold was designed to produce round cir-

cular connectors. Further, this would have been spotted during a routine on-line inspection.

He concluded it was more likely that a defect in the formulation or handling of the thermosetting plastic caused time-dependent internal stress to deform the connector from round to oval [or flat], resulting in the loosening of the upper hose and the scalding of plaintiff.

Contrary to this evidence, a General Motors' expert testified that the part was not a thermosetting plastic, but rather a nylon glass-filled composite that had thermoplastic characteristics, including the ability to re-mold. To rebut this, plaintiff's expert submitted a supplemental affidavit in which he acknowledged that he incorrectly stated that the connector was made of such plastic when it really was made of a glass thermostatic composite. He concluded that the error did not alter his opinion as to the cause of the defect.

The court considered General Motors' motion to exclude the expert testimony and determined that Oglesby failed to produce competent evidence that the truck was in the same condition as when it left the defendant's possession, because of the truck's age, mileage, and prior repairs exceeding the reasonable limits of establishing a fundamental element under South Carolina product liability law. Additionally, the plaintiff did not introduce evidence that General Motors knew of a potential product defect involving this type of radiator.

Specifically, with regard to the proffered expert testimony, the court noted that while the expert was a qualified mechanical engineer who attempted to apply general engineering principals, his testimony was not sufficiently reliable as it did not properly draw on specialized knowledge, but rather unsupported allegations. The court considered the fact that the expert observed the inlet connector and noted it was flat rather than round. The court specifically observed that he merely assumed the manufacturer's mold was round and deduced that the connector could become flat only during the time that it was in handling. The court stated that he merely assumed this instead of inspecting the mold or inspecting other like hoses having been subject to these conditions.

In fact, the expert admitted he did not know of the type or composition of the plastic, did not ask the manufacturer, did not analyze the part, did not test it, and did not apply any calculations. He could not eliminate other causes for the plastic having become flat or cracked, such as overheating, trauma to the

inlet connector, or even stress applied by leaning on the connector with too much weight when the plastic was hot. He merely assumed that the part could have gone flat after it left the manufacturer's mold, but asserted no factual basis for this conclusion. The court determined that even applying generally known engineering principals, the proffered expert failed to produce any foundation and that the opinion lacked probative value because of this lack of foundation. This left his opinion entirely speculative and properly excluded.⁸⁶

In *Weisgram v. Marley Co.*,⁸⁷ the plaintiff, Chad Weisgram, brought suit individually and on behalf of his mother's, Bonnie Weisgram, estate against Marley Co. for wrongful death. On December 30, 1993, the decedent was discovered in her home lying face down on top of a large broken mirror in the upstairs bathroom of the residence. Firefighters had been called to the home when an off-duty firefighter noticed flames around the front entrance. Upon entering, the firefighters discovered the decedent. They also found an open window in the upstairs bedroom, which adjoined the bathroom where the body was found. The cover of a smoke detector located on the ceiling in the upstairs hall had been removed and was found on the carpeted floor near the decedent's bedroom. A folding chair was on the floor folded up near the detector cover, which was lying on the carpet. Apparently the smoke detector had been there before the fire because no soot had accumulated underneath it on the floor. A fifteen-year-old baseboard heater had been mounted on a wall in the home before the fire. Although there was structural fire damage around the entrance to the home, the remaining portion of the house suffered damage from smoke, heat, and water, but not fire.

It was later determined that the decedent died from smoke inhalation at approximately 2:30 a.m. that day, prior to having been discovered at 6:00 a.m. Carbon-monoxide poisoning was the official cause of death. There was evidence that the dece-

⁸⁶ This case is a perfect example of obtaining an expert who does not know the facts of your case. The expert in this case did not observe similar conditions, barely observed the parts at issue and did not observe their creation, their practice with simulation, or the conditions in which they were tested on a daily basis. Furthermore, the expert did not go to the basic lengths of determining the composition of the alleged defective device in the automobile. These are all preliminary questions that should be answered by experts, not only for purposes of admissibility, but for purposes of making their opinion particularly probative and helpful to the jury.

⁸⁷ 169 F.3d 514 (8th Cir. 1999).

dent's blood alcohol level was 0.15 and that she had taken a drug generally prescribed to relieve pain and as a sleep aid. She was last seen alive at 1:00 p.m. the previous day.

The jury awarded \$500,000 to the plaintiff and estate. State Farm, which insured the decedent's home and sued to recover insurance benefits paid for the damage to the home, was awarded \$100,575.42. Defendant Marley filed a motion for judgment as a matter of law and a motion for new trial. Both were denied. On appeal to the Eighth Circuit Court of Appeals, the defendant challenged the admission of certain expert testimony presented by the plaintiff.

The Eighth Circuit first considered the plaintiff's burden of proof in what was a strict product liability case.⁸⁸ The court noted that the plaintiffs were required to prove by preponderance of the evidence that the baseboard heater was "defective in design or manufacture; the defect rendered the product unreasonably dangerous to the consumer; the defect existed when the product left the manufacturer; and the defect was a proximate cause of the [plaintiffs'] injuries."⁸⁹ The court noted that it was not entirely clear whether the plaintiffs were alleging the heater had a design defect, a manufacturing defect, or no defect at all. Thus, the court determined that the district court abused its discretion in allowing certain opinion testimony because the testimony did not point to a defect or show that the heater was unreasonably dangerous and proximately caused the fire.

At trial, plaintiffs introduced two witnesses. The first, Dan Freeman, was the Fargo, North Dakota Fire Captain who arrived with the first fire truck on the scene at the decedent's home. He was also the firefighter who conducted the investigation into the accident. Freeman testified he initially thought that careless smoking might have started a fire in the sofa, but rejected that theory because he saw no smoking materials in the home and did not think the burn pattern in the sofa supported his suspicion. Freeman's opinion was that the fire started in the defendant's baseboard heater and radiating heat ignited the material on the couch. Evidence indicated the sofa was six to eight feet away from the heater and it was at least partially shielded from any radiated heat. Over objection at trial, Freeman testified that the fire started because of a malfunction in the heater.

⁸⁸ *See id.* at 517.

⁸⁹ *Id.*

The court began by noting that Freeman admitted he was not an electrical expert and that he did not know what happened with the heater. The court determined that while Freeman was an expert as to cause and origin of fires, there was no question he was not qualified to offer testimony as to the heater malfunction and thus should not have been permitted to testify on that issue.

Furthermore, the court noted that Freeman's testimony was "patent speculation"⁹⁰ because he offered no evidence regarding the location of other items, such as a throw rug, in the home and their impact on the possible causes of the fire. For example, although Freeman was qualified to testify that he thought the fire originated in the area of the baseboard heater, he did not support the theory. Freeman failed to substantiate his theory that the throw rug somehow blocked the heater that ignited the rug, transferring heat to the adhesive of the vinyl flooring, which released deadly vapors that somehow ignited and accelerated the fire. Although Freeman was otherwise qualified as a fire inspector, the court found that this did not give him free reign to speculate before the jury while relying on inferences that had no support in the record.

Furthermore, Freeman was the person responsible for investigating the cause of the fire, which required testing and analyzing samples from the scene. Freeman, however, gathered only samples of the burned rug from the area around the entranceway. These samples were tested for composition and to see whether there was an accelerant present to support his theory. The only other evidence-gathering Freeman did was to take photographs and retrieve the burned baseboard heater. The court stated that this showed Freeman only gathered evidence that would support his early determination that the heater caused the fire without investigating other possible causes.

Defendant Marley Company also challenged the reliability of the second preferred expert, Ralph Dolence. Dolence was a master electrician in Ohio. He testified as a fire investigator and a technical forensic expert. He had previously consulted on electrical fires, however, he denied being an expert electrician. Dolence, like Freeman, believed the baseboard heater caused the fire. But Dolence also failed to substantiate this theory properly. Most of his conclusions were drawn from the observations Freeman made at the fire scene. He speculated that the small

⁹⁰ *Id.* at 519.

floor rug was pushed over the heater, trapping heat underneath, and focused on the floor and linoleum releasing the deadly vapors from the adhesive on the floor, which lighted and caused the fire. The court found the basis for this theory nonexistent. Dolence did no testing to support his theory and further admitted he knew of no tests that anyone had conducted to support a similar theory of fire cause or origin. The court concluded this was insufficient foundation on which to base opinion testimony.

Expert Dolence testified that because the thermostat and other component parts of the heater were destroyed in the fire, he was not able to test them. This opinion that the thermostat suddenly and simultaneously did not function to shut the heater off was unsupported. Dolence admitted he had no idea what caused the thermostat or the component parts to fail. Further, he admitted there were no design defects in the heater. He could not create similar overheating episodes in an undamaged, exemplar heater that had been retrieved after the fire from another town house in the area.

Dolence contacted a metallurgist, Sandy Lazarowicz. Lazarowicz was qualified as an expert as to the properties of metal; however, he admitted was not a fire cause/origin expert. Dolence contacted him to determine whether the heater was in fact defective in some way. Lazarowicz examined the thermostat contacts and the high limit control contacts from an exemplar heater, as well as the same thermostat and internal component in the decedent's heater. Because the thermostat contacts were serrated, he believed the contacts were defectively designed. The rough surfaces apparently cause arcing and material transfer between the contacts. His theory was that the continual usage and build up of defects on the surface must have caused them to weld. As a result, there was a closed circuit and the heater could not shut off, thus causing the unit to overheat.

The court noted at the time Lazarowicz formed his opinions, he was unaware of the heater wattage or amperage and was unable to know the thermostat could have reached a high enough temperature to melt the metal and form a weld before the fire occurred. No tests were performed to determine whether it was even possible for the contacts to become sufficiently hot for a welding process to occur. Lazarowicz was unable to say that the contacts actually welded notwithstanding his examination of them under the microscope. It was only after close examination of the contacts that he was he able to discern evidence of welding. The court of appeals determined the district court abused

its discretion by permitting Lazarowicz's unsubstantiated testimony.

In *Bickley v. Norfolk & W. Ry. Co.*,⁹¹ plaintiff brought suit in the Northern District of Ohio for compensatory and punitive damages arising out of a train-truck collision at a Norfolk & Western grade crossing. On December 9, 1993, Plaintiff Bickley was driving a semi tractor-trailer east on Portland Road in Erie County, Ohio. Portland Road intersects a north-and-south railroad track owned by the defendant. In his deposition testimony, Bickley stated that as he approached the track he was traveling between forty-five and fifty-five miles an hour, looked both north and south before driving through the grade crossing, but neither saw nor heard the defendant's train approaching. The train was unable to stop in time to avoid hitting the plaintiff's truck. The plaintiff suffered severe injuries. Plaintiff claimed the grade crossing was "extra hazardous" because while exercising ordinary care he was not able to see the train and could not avoid the collision.

Defendant Norfolk & Western submitted a motion for summary judgment. Plaintiff, in rebuttal, proffered an expert witness, Dr. William Berg, a physical engineer and expert in the field of railway and highway safety. Dr. Berg submitted an affidavit presenting numerous conditions that prevented plaintiff Bickley from seeing the oncoming train so as to render this crossing unusually hazardous. The affidavit included the following conclusions: (1) the combination of a building structure and vegetation, in addition to the angle at which the crossing intersected the road, obstructed the plaintiff's view; (2) the minimum sight distance requirement could be met only if the train speed did not exceed seven to nineteen miles per hour; however, the maximum train speed is forty miles per hour; (3) Portland Road has a "hump profile," which shows there is a slight incline in the road before the tracks; and (4) Portland Road has a high rate of truck traffic.

Dr. Berg also relied upon the Federal Department of Transportation Crossing Accident Prediction Model. The model indicated the expected vehicle/train accident rate at this crossing was one accident every seven years, but that from 1985 until 1992 this crossing had an average of one accident every three years. This accident rate was substantially above average and

⁹¹ (187 F.3d 634), 199 WL 427026 (6th Cir. June 15, 1999) (unpublished opinion).

placed this crossing among the most hazardous in Ohio and throughout the defendant Norfolk Western system. Finally, Dr. Berg stated that he examined the cause factors associated with the accident, reviewed the accident reports, and the reconstruction of the time and space perimeters as reported by the plaintiff.⁹² In Dr. Berg's opinion, these facts rendered the crossing unusually hazardous. He testified that safety features such as automatic gates and lights would have created merely a minimum reasonable level of safety. No such safety precautions or features were in use at the crossing. Defendant challenged the expert testimony.

The district court determined that the proffered testimony was inadmissible because it was unpersuasive, unsupported, irrelevant, and suspect. The Sixth Circuit concluded that the district court did not abuse its discretion in not allowing the testimony for several reasons, including that: (1) although evidence of prior accidents is admissible to show the dangerous nature of a grade crossing, here, evidence of those accidents was inadmissible because plaintiff failed to show a substantial similarity between the Portland Road accident statistics and the accident at issue; (2) Dr. Berg's testimony as to the rate of speed was unreliable and irrelevant because it dealt with the view from the southwest quadrants, while the evidence indicated the relevant view point was from the northwest quadrant; and (3) the admitted photographs refuted plaintiff's assertion that a motorist who looked and listened properly would have been unable to avoid collision. For these reasons, the Sixth Circuit determined that the district court properly excluded the expert testimony of Dr. Berg. Finding no other evidence to support the plaintiff's claim, the appellate court affirmed the district court's grant of summary judgment in favor of the defendant.

Plaintiff, in *Bogosian v. Mercedes-Benz of North Am., Inc.*,⁹³ brought suit after being struck and injured by a rolling automobile. Plaintiff commenced a diversity action alleging strict products liability, negligence, and breach of warranty against Mercedes-Benz of North America and Daimler-Benz North America Corporation. The facts are as follows:

On July 9, 1992, Bogosian drove her daughter's 1986 Mercedes Benz "560 SEL" automobile home and pulled into the park-

⁹² *Id.* at *3. The plaintiff indicated he had about two seconds to perceive and react to the train. *Id.*

⁹³ 104 F.3d 472 (1st Cir. 1997).

ing area adjacent to the driveway. According to her testimony, Bogosian put the transmission gear selector level, which is located on the console shift between the front driver and passenger seats, in the park position. She did not set the parking brake. The pavement upon which she parked was slightly sloped toward the rear of the car. When she decided to check her mail at the mailbox located near the street, the vehicle rolled backwards, struck her, knocked her down, ran over her ankle, and caused her injuries. At trial, the jury returned a verdict in favor of Mercedes-Benz on the strict liability claim. Plaintiff appealed contending the district court erred in granting judgment as a matter of law to Mercedes-Benz on the negligence claim and in excluding one of her proffered expert witnesses.

Plaintiff argued the district court improperly excluded the proposed expert testimony of Joseph Davidson. Davidson held a bachelors of science degree in industrial and vocational education, and was certified to teach vocational automobile mechanics. At the time of the trial, he was certified by the National Institute for Automotive Service Excellence as a master automobile technician for diagnosis and repair of various vehicles including passenger cars. He had previously worked as an auto mechanic from 1952 to 1967. Afterwards, he became a consultant in forensic automotive mechanics, which was his full time employment at the time of trial.

Davidson's testified about the false park detent theory. The defendants challenged the testimony because the transmission design was not within the expert's area of expertise, the methodology in examining the 560 SEL was unreliable, and the factual foundation for the testimony was inadequate. The plaintiff was unable to establish that the vehicle was in substantially the same condition at the time it was tested as it was when the accident occurred. The court set forth the standard of *Daubert* in Federal Rule of Evidence 702, "when faced with a proffer of expert testimony, the district court must determine whether the expert witness is qualified and has specialized knowledge that will 'assist the trier of fact to understand the evidence or to determine the fact in issue.'"⁹⁴

The court determined that it was the responsibility of the trial court to first determine whether or not the expert is qualified by "knowledge, skill, experience, training, or education . . ."⁹⁵ and

⁹⁴ *Id.* at 476.

⁹⁵ *Id.* (quoting FED. R. EVID. 702).

second whether the proposed subject matter of the testimony concerned “scientific, technical, or other specialized knowledge.”⁹⁶ Lastly, the appellate court acknowledged that the trial court performs a “gatekeeping” function to determine whether the testimony is ultimately helpful to the jury and whether it rests on a reliable foundation based on the facts of the case.⁹⁷

Initially, the court considered Davidson’s qualifications. The court noted that Davidson did not have an engineering degree. His formal education in engineering was limited to three semesters of electrical engineering courses at Carnegie Mellon University before he dropped out. Despite hands-on experience, Davidson admitted that he had never professionally designed a component for an automobile, although he had done so as an expert in the courtroom. Additionally, he stated he had never designed a transmission or a gearshift selector, and had no formal training in manufacturing automobiles or their components. With regard to this case, he had not seen design drawings or specifications of the 560 SEL, but had reviewed service literature and cutaway drawings of the automobile. Further, although Davidson had testified as an expert in 126 cases, only one of them involved the false park detent theory. Moreover, his background showed a lack of any “significant expertise” with regard to knowledge, skill, experience, or training in the areas of design or manufacture of automobiles and their components.⁹⁸ The court determined that “[w]hile not dispositive, the lack of a mechanical engineering degree or other engineering expertise certainly calls into question Davidson’s ability to criticize the design of a transmission parking mechanism and its operation under various circumstances.”⁹⁹ Consequently, the court determined that he was not qualified as an expert.

The court then considered the underlying methodology on which Davidson based his opinion. Davidson’s proposed testimony was that he first identified the false park detent theory in January of 1979. He would explain that this condition could occur when a gear selector lever is not placed completely in the park groove, the position referred to as “latched park.” In this way, the gearshift would not lock into a certain position. The position just outside of latched park could produce false park

⁹⁶ *Id.*

⁹⁷ 104 F.3d at 476.

⁹⁸ *Id.* at 477.

⁹⁹ *Bogosian v. Mercedes-Benz of North Am., Inc.*, 104 F.3d 472, 477 (1st Cir. 1997).

detent, described as “a tactile sensation that the car is fully in park gear. In this situation, the car is susceptible to rolling.”¹⁰⁰ Davidson would have explained that a vehicle could suddenly roll because the park mechanism was only slightly engaged and not fully compressed. Davidson would have testified that false park detent occurs when someone shifts quickly from drive to park, but fails to fully engage the latched position.

In support of this testimony, Davidson pointed out that in January 1994, he questioned the plaintiff about the July 1992 events leading up to the incident. He examined the parking area of her home and measured the grade of the approximate parked location. Davidson tested and experimented with the action of the park lock in the vehicle’s transmission. Davidson also tested the gear shifter to confirm it was “in good adjustment.” He inspected the right wheel and turned it until the park “pawl” in the transmission locked in the park position. After he had done so, he moved the gear selector out of park and turned the rear wheel such that when he shifted back into park, the pawl would hit the tip of the tooth on the gear. Essentially, he did this to test for susceptibility for false park detent. Based on this testing, Davidson was prepared to offer testimony that this mechanism caused false park detent.

Citing the district court’s concerns with this testimony, the court of appeals agreed with the district court’s finding that Davidson was not qualified because there was no evidence in the record that Davidson’s test was a known technique. He did not produce a journal, paper, or anything to show that this technique was tested or approved.

Plaintiff, at this stage of the proceedings, argued that the district court committed reversible error because it characterized the subject matter of Davidson’s testimony as “scientific” instead of “technical” so as to render *Daubert* analysis inapplicable. The appellate court assumed, for argument’s sake, that this case did not involve science or scientific testimony. But it determined the outcome would be the same because the purpose of the judge’s role in determining admissibility of expert testimony is to ensure that the testimony is reliable and relevant to the task at hand. Thus, even if the court erred in characterizing the testimony as scientific, the analysis was effective nonetheless.¹⁰¹

¹⁰⁰ *Id.* at 478.

¹⁰¹ *Id.* at 479.

In addition, the court noted that the tests run by Davidson did not reproduce conditions similar to those that existed in the accident. For example, he viewed the automobile at a dealership rather than on the driveway or on a similar grade. Additionally, Davidson assumed that the false park detent occurred by rapidly shifting the gear lever from drive to park. However, no evidence was introduced that this was so. Furthermore, plaintiff testified repeatedly that she looked at the console shift before exiting the vehicle and saw the gearshift in park. The fact that her testimony conflicted with the factual basis upon which the expert based his opinion was sufficient grounds to render the opinion unreliable, contradictory, and probably not helpful to the jury for accessing what actually happened.

Finally, the court considered defendant's argument that plaintiff's expert failed to show that the condition of the 560 SEL at the time of the expert's exam was substantially similar to that at the time of the accident. Again, the car was viewed in an auto dealership, not outside on a similar type of grade or driveway so as to reproduce the conditions. There was no evidence produced that the transmission was in the same condition at the time the expert viewed the car as at the time of the accident.¹⁰² The court determined that the proffered testimony was neither sufficient nor entirely relevant. Ultimately, the court concluded that the district court correctly exercised its discretion to exclude the testimony of Davidson.

*Libas, Ltd. v. United States*¹⁰³ is a rare case in which the Federal Circuit held that the district court abused its discretion by giving consideration to the weight rather than merely the admissibility of the proffered expert testimony.

Plaintiff Libas imported fabric from India through a port in Los Angeles. In 1994, it imported thirty-two bales of rolled cotton fabric previously certified by the Indian government as hand-loomed and entered the fabric as a "certified hand-loomed product" under subheading 5208.42.1000, Harmonized Tariff Schedule of the United States. In September 1994, U.S. Customs demanded redelivery of the fabric and subjected it to a new test to determine whether the fabric had been power-loomed or hand-loomed. Ultimately, the U.S. Customs classified

¹⁰² A prima facie showing of substantial identity of a product's condition at the time of an accident versus the time of an inspection is one of the key considerations in such cases. See *Kukuruza v. Gen. Elec. Co.*, 510 F.2d 1208, 1212 (1st Cir. 1975).

¹⁰³ 193 F.3d 1361 (Fed. Cir. 1999).

the fabric as power-loomed. As such, power loomed fabrics were subject to the Harmonized Tariff Schedules of the United States.

Underneath the umbrella of this specialized international area of law, the court undertook a typical *Daubert* analysis with regard to the excluded expert testimony. For purposes of determining whether the U.S. Customs classification as power-loomed was correct, Libas sought to introduce expert testimony that skilled hand weavers could produce results similar to machine weaving and that washing of the fabric would reduce the discrepancy between the results of the two production processes. This raised questions about whether the U.S. Customs test would accurately distinguish between power-loomed and hand-loomed fabric. The Federal Circuit noted at this point that the proffered testimony challenged the reliability of the customs procedures and that the district court should have examined the customs test with either a *Daubert*-style analysis or some other manner of examination to determine reliability. The district court determined that, because plaintiff's witnesses testified that the customs tests were widely accepted in the industry and had been used for many years so as to be "reasonably calculated to determine whether fabric is loomed by machine or by hand," the customs experts need not be evaluated pursuant to a *Daubert*-type analysis.¹⁰⁴

Plaintiff's main contention was that the trial court erred by not evaluating the proffered customs witnesses under *Daubert*. Despite that testimony from plaintiff's witnesses showed that the customs tests were widely known, accepted, and had been used for years, the appellate court stated this did not render them automatically admissible, inasmuch as "widespread acceptance" was only one factor in the assessment of reliability.¹⁰⁵ The court noted upon review that it was significant that the U.S. Customs tests failed to satisfy any of the *Daubert* factors except general acceptance and offered no other indicia of reliability. A *Daubert* or other similar type of inquiry should have been made with regard to the customs evidence. The court remanded the case for such a determination.

Clark v. Takata Corp.,¹⁰⁶ the plaintiff, while traveling in his 1991 Honda Accord on a highway in Kentucky, was struck from

¹⁰⁴ *Id.* at 1367.

¹⁰⁵ *Id.* at 1368 (quoting *Daubert*, 509 U.S. at 594).

¹⁰⁶ 192 F.3d 750 (7th Cir. 1999).

behind by a party driving a pickup truck. The collision caused plaintiff's vehicle to veer off the road and roll down an embankment. Plaintiff Clark suffered spinal cord injuries and subsequently sued Takata Corp., American Honda Motor Co., Honda Motor Co., Honda of American Manufacturing, Inc., and Honda R & D Co. Plaintiff alleged that his seat belt was defective because it came unlatched during the rollover allowing his head to strike the roof and causing his injuries. At trial, the district court judge excluded plaintiff's experts. Defendants filed a motion for summary judgment, which the district court granted. Clark appealed, assigning the trial judge's exclusion of proffered expert testimony as error.

Plaintiff obtained Dr. James Lafferty, P.E., Ph.D., to serve as an expert witness. Lafferty submitted an expert report, that concluded but for Mr. Clark's lap belt unlatching, he would have been restrained from hitting the roof of the Honda and would have suffered no serious injuries. Lafferty testified similarly in a subsequent deposition, yet gave no indication about how he arrived at this conclusion.

In the one-and-one-half page report, Dr. Lafferty stated that he based this opinion on his review of the pertinent medical records, relying on the fact that the plaintiff suffered a fracture dislocation of vertebrae C6 and C7 of his spinal column. He then estimated the amount of force necessary to cause the plaintiff's injuries. He concluded the necessary force was 1,000 pounds. Thus, the injury occurred when the plaintiff's head hit the roof while the car was rolling over. In his report, Lafferty indicated that he took plaintiff's measurements and determined his seated height was approximately 32 inches. He indicated the distance from the bottom of the seat cushion to the roof of the Honda was 36 inches, so that plaintiff had 4 inches of clearance between his head and the roof of the car. From this, Lafferty opined that a lap belt would have prevented his neck injury.

The court held Lafferty's opinion was speculation because it was based on no substantive facts. Lafferty did not consider the plaintiff's height or weight in drawing these conclusions. Lafferty made no other measurements. He did not know how far the seat was reclined or the degree or extent to which the roof was crushed. Facing a Motion for Summary Judgment, Lafferty filed an affidavit in which he stated:

[i]n order to clarify my opinion so that there can be no doubt about my opinion, I would like to re-state my professional opinion [B]ased on my education, research, and experience in

the fields of Biomechanics and Mechanical Engineering it is my professional opinion that had [Clark's] lap belt remained fastened, Clayton Clark would not have suffered serious injury.¹⁰⁷

Lafferty further mentioned that there was a relative lack of blood on the lap belt in comparison to the blood on the shoulder harness and seat. This indicated that the lap belt was probably not buckled during and after the accident.

Citing the *Daubert* rule and the function of the trial court to ensure that only reliable and relevant evidence makes it to the jury, the appellate court determined that the proffered testimony essentially consisted of two opinions. First, the lap belt unbuckled during the rolling over of the car; and second, a properly functioning lap belt would have prevented plaintiff's injuries. When determining whether the expert conclusions were helpful to the jury, the court noted that Lafferty assumed as true the fact that Clark needed to prove in order to recover, namely, that the lap belt, though previously secure, became unlatched during the accident.

The court indicated that a liability expert is only helpful to the jury if he is able to establish an element of the claim. This could be done through visual inspection, independent research, testing and knowledge. Lafferty's testimony, however, indicated he had not proven the allegation, but rather assumed it to be true. The court concluded subjective belief or unsupported speculation does not assist the jury in determining whether the product failed.

With regard to Lafferty's second opinion that had the lap belt been latched the plaintiff would have been restrained from striking the ceiling of the car, the opinion was again based solely on assumption without any testing or research material to support this theory. As the appellate court noted, Lafferty failed to determine, or even consider, the speed at which the car was driving, the intensity of forces to which the car and the plaintiff were subjected, or the strength or flex of the car and lap belt. Because none of these factors were addressed, the opinion offered by Lafferty was otherwise unsupported.

Lafferty's opinion could be contrasted with Harry Smith, the defendant's expert. Mr. Smith conducted three driver and exemplar tests involving two Honda Accords similar to the accident vehicle. In two of the tests, the vehicles were mounted and rotated to determine how a driver of Clark's size and weight

¹⁰⁷ See *id.* at 756 (alterations in original).

would have moved during a similar type of rollover action. The defendant's expert also relied on published studies showing kinetics of the human body in both restrained and unrestrained safety belts. Based on these facts and research, Smith concluded that without the seatbelt, the plaintiff would have been ejected from the car, not merely thrown against its ceiling.

Absent a showing that Lafferty considered the facts of the case, specifically the height of the plaintiff, the angle at which he sat, the height of the seat, the level of incline, the velocity of the car, the precise movement of the vehicle, or any simulations thereof, Lafferty's expert testimony was unfounded. Moreover, it merely assumed the fact it was expected to prove. For this reason, the appellate court found the district court correctly excluded plaintiff's expert.

IV. THE RESULTS

Unfortunately, *Kumho* has not clarified the standard for admissibility, eliminated junk science, or streamlined the litigation process. The most significant impact has been on the amount of preparation and the timing of preparation litigators must undertake. Clearly, as practitioners, we must identify the issues in the case early in the discovery process in order to both choose qualified experts and gather information the experts need to render opinions that withstand the *Daubert* challenge. As such, a few practice pointers seem obvious.

Choose an expert well qualified in the particular field. Specialized experts are in higher demand in light of challenges based on the background education and training threshold. The general-purpose expert in any field—medical, engineering, mechanics—is significantly disadvantaged when challenged by an opponent with an expert highly specialized in a particular aspect of her field.

Consult with your experts early and often. Experts must now accept greater responsibility throughout the discovery process. The information provided the expert by the attorney is often insufficient or ineffective as a basis for testimony. Experts must be prepared to inform the attorney of information needed; tests that must be performed; and, most significantly, attend at deposition if possible. Additionally, experts must anticipate the basis of challenges of the work performed, inform counsel of the weakness, and prepare a cure for the weakness. These precautions can only be accomplished through consistent communication.

Become an expert yourself. An advocate cannot effectively challenge an expert witness without adequate knowledge, nor can the unenlightened recognize weaknesses in her own expert.

Focus your deposition on the reasoning and methodology supporting the opinions. Rule 26 disclosures express the opinions of experts; rarely do opinions change in deposition. Narrow your focus to the reasoning supporting the opinions. Specifically, challenge each opinion at its most basic scientific principles or conversely prepare for such a challenge. The expert must expect to support each proposition with both the factual basis as established in the record and the pure science that leads to the applied science of her field.

Do not ignore the *Daubert* factors. Unfortunately, there is still room for the unenlightened judge to "fit the square peg into the round hole." This fact, coupled with the abuse of discretion standard of review, make dismissal of these factors extremely treacherous ground. Even with technical experts, we should look to the trade journals and beyond for supporting documentation, testing, and acceptance in the community.

V. CONCLUSION

In light of these concentrated efforts that must now go into the preparation of experts and the significantly higher rate of expert challenges, we must all be prepared for increases in the cost of litigation. We can expect higher expert fees, higher discovery costs, and an increase in motion practice. As such, one might question whether this evidentiary standard is better than the *Frye*¹⁰⁸ test.

¹⁰⁸ 293 F. 1013 (D.C. Cir. 1923).