Applying Daubert and Kumho Tire to Experts in Fire Cases Should Not Result in the Exclusion of Experts or Testimony that were Accepted Before Daubert

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APPLYING DAUBERT AND KUMHO TIRE TO EXPERTS IN FIRE CASES SHOULD NOT RESULT IN THE EXCLUSION OF EXPERTS OR TESTIMONY THAT WERE, ACCEPTED BEFORE DAUBERT

In accordance with Daubert and the cases applying it, a party offering expert testimony must show by a "preponderance of proof" that the expert whose testimony is offered is qualified and has scientific or technical knowledge that will assist in understanding and deciding relevant issues. Before the Supreme Court's 1999 decision in Kumho Tire, there was some disagreement in the courts concerning the applicability of Daubert to experts typically used in fire cases. Compare Michigan Millers Mut. Ins. Co. v. Benfield, 140 F. 3d 1915 (1lth Cir. 1998) with Talkington v. Atria Reclamelucifers Fabriekenbv, 152 F.3d 254 (4th Cir. 1998); see also P.A. Krebs and B.F. DeTray, Kumho Tire Co. v. Carmichael: A Flexible Approach to Analyzing Expert Testimony under Daubert, 34 Tort & Ins. L. J. 989, 998-1000 (Summer 1999). Kumho Tire established that the trial judge's gatekeeping role applies to ***all*** expert testimony - rendering the scientific versus non-scientific distinction moot. Unfortunately, the broad discretion given trial courts in determining the "reliability" of conventional experts typically used in fire cases has led several courts to exclude experts and testimony that previously were accepted with little question. T. Mullin, Applying Daubert to Fire Origin and Cause Investigations, For the Defense, p. 36 (October 1999). That result is inconsistent with the articulated purpose of Daubert in replacing the previous, more rigid Frye test with a, presumably, more flexible analysis.

Proving a theory of liability (or defending a claim) involving fires almost always will require expert opinion testimony from a fire origin and cause expert to establish the area of origin and source of ignition. Thereafter, a more technical expert, usually a registered professional engineer, also may testify about the specific failure mechanism and fire sequence. Such specialized experts typically may include electrical engineers, chemists, mechanical engineers, metallurgists and many other highly or focused disciplines. For years, such experts

were routinely qualified to testify in federal district courts. See, e.g., In re: Ta Chi Navigatio (Panama) Corp., S.A., 504 F. Supp. 209, 226, 231-33 (S.D.N.Y. 1980); Gichner v. Antonio Troiano Tile & Marble Co., 410 F.2d 238 (D.C. Cir. 1969). The courts long have recognized the particular aspects of fire cases that make the use of circumstantial evidence unique:

> Despite this testimony establishing that fire experts frequently rely on circumstantial evidence in forming an expert opinion as to the cause of a fire, and that, because of the fire damage and location of the electrical components inside the refrigerator casing, there was no direct evidence available in this case, and despite the fact that [the expert] was apparently prepared to testify that the evidence pointed to an electrical malfunction in the thermostat as the only possible cause of the fire, the district court repeatedly refused [improperly] to permit [the expert] to state his opinion as to the probable cause of the fire.

Breidor v. Sears & Roebuck Co., 722 F.2d 1134, 1138 (3 d Cir. 1983); Commercial Union Ins. Co. v. Basfield, 832 F. Supp. 234, 236 (C.D. 111. 1993) (explaining that "[blecause all direct evidence is often destroyed, fire experts often must rely on circumstantial evidence in determining the cause of a fire"). For a different result post-Daubert, see Pride v. BIC Corp., 218 F.3d 566 (6th Cir. 2000), and Farris v. Coleman Company, Inc., 121 F. Supp. 2d 1014 (N.D. Miss. 2000).

The methodology used by origin and cause experts has evolved and undergone refinement over the last decade. The National Fire Protection Association, a world-renowned leader in fire safety, publishes a guide for fire and explosion investigations that sets forth in Chapter 2 a basic methodology. See N.F.P.A. 921 Guide For Fire and Explosion Investigations (1998) [hereinafter N.F.P.A. 921][1]. The American Society of Testing and Materials also publishes guides for the collection and preservation of evidence and collecting and testing information and evaluating technical data. See ASTME - 1188; ASTME- 860; and ASTME -

[1] An updated version of N.F.P.A. 921 will be released in April 2001.

678. As is succinctly explained by the National Fire Protection Association itself, N.F.P.A. 921 was "designed to produce a systematic, working framework or outline by which effective fire investigation and origin and cause analysis can be accomplished." It was not designed to encompass all of the necessary components of a complete investigation or analysis of any particular case and, most important, "recognize[s] that time and resource limitations or existing policies may limit the degree to which the recommendations in [N.F.P.A. 921] will be applied in any given investigation." N.F.P.A. 921 was developed as a model for the advancement of fire investigation technology. In light of Daubert and Kumho Tire, it instead has become the standard for fire investigations.

Daubert was primarily concerned with the reliability and relevance of expert testimony in the federal courts. The investigation into reliability essentially focuses on methodology while "fit" or relevance has traditionally been within a court's obligation to insure there was a nexus between the expert's testimony and the issues. As is noted in N.F.P.A. 921, the general methodology used by fire origin and cause experts is well accepted. Nevertheless, some courts have used Daubert to preclude testimony from experts in fire cases at trial, in post-trial motions, and even on appeal. The United States Court of Appeals for the Eighth Circuit's recent decision in Weisgram v. Marley Co., 169 F. 3d 514 (8th Cir.), aff d, ____ U. S. ____ (2000), represents just such, an expanded and unwarranted application of Daubert.

In Weisgram, the Eighth Circuit overturned a $600,575.42 jury verdict arising from the tragic death of a woman (and the damage to her home paid by her property insurer) as a result of a fire. The Eighth Circuit reversed the jury verdict and directed that judgment be entered for the defendant as a matter of law, rather than ordering a new trial, based on several "abuses of discretion" by the trial court in allowing expert testimony from the plaintiff's three

experts. The Supreme Court recently affirmed the appellate court's power to reverse rather than return the case for a new trial.

The facts in Weisgram are of interest. On December 30, 1993, firefighters in Fargo, North Dakota, responding to a call from an off-duty firefighter, discovered Bonnie Weisgram's body lying face down on top of a large, broken mirror in an upstairs bathroom. They also found an open window in the upstairs bedroom adjoining the bathroom where the body was found. The cover of the smoke detector in the ceiling of the upstairs hallway was discovered on the carpet in the bedroom. A folding chair was on the floor near the detector cover.

In the living room, an L-shaped sectional sofa was badly damaged by fire in both sections. The two back sections of the sofa had been removed and were on either side of an open entryway. There also was a hole burned through the floor of the entryway. A fifteen year old baseboard heater manufactured by Marley Company, the defendant, had been mounted before the fire on the south wall where the hole in the floor was discovered. There was some structural fire damage in the entrance of the townhouse but the remainder of the residence only suffered damage from smoke, heat, and water.

An autopsy revealed that Ms. Weisgram died from smoke inhalation at approximately 2:30 a.m. Her blood alcohol level was 0.15 and there was evidence that she had taken a drug either prescribed to relieve pain or as a sleep aid. There was no evidence that she took the medication the evening of the fire. She was last seen alive at approximately 11:00 p.m. on the evening before the fire by her fiancé who observed her drinking an alcoholic beverage and smoking a cigarette before he left.

Mrs. Weisgram's adult son, individually and on behalf of her heirs, sued Marley Company for the wrongful death of his mother. State Farm, the property insurance carrier, filed a separate subrogation action for $100,575.42 paid as a result of property damage to the

townhouse. The actions were consolidated and tried together to a jury that returned a verdict in the amount of $500,000.00 in favor of Chad Weisgram, and awarded to State Farm the full amount which it had paid under the property policy. Marley's motion for judgment as a matter of law and for a new trial was denied.

The Eighth Circuit reversed, holding that judgment as a matter of law should have been granted to Marley because the district court abused its discretion in allowing certain opinion testimony at trial. Weisgram, 169 F.3d at 517. The court reasoned that once the offending testimony was removed, the remaining evidence was insufficient as a matter of law to prove that the heater was defective at the time that Marley had sold it.

Weisgram was decided before the Supreme Court's decision in Kuhmo Tire, which the court noted was pending at the time. Weisgram, 169 F.3d at 517 n. 3. The Eighth Circuit determined that the issue in Kubmo Tire did not affect its decision because "the testimony at issue here should have been excluded under Rule 702 as unreliable whether or not the four Daubert factors are considered." Id. at 517 n.3. The court took exception to testimony from all three of plaintiff's expert witnesses.

The first expert was the captain of the Fargo, North Dakota Fire Department who arrived on the first truck responding to the fire. He also performed the investigation for the Fargo Fire Department. The Eighth Circuit admitted that Captain Freeman was qualified as a fire origin and cause expert and was properly permitted to testify where he believed the fire had originated. Id. at 5l8-19. However, the court found that he was not qualified to offer an opinion regarding the alleged malfunctioning of the heater. Thus, his testimony that the heater was in a "runaway condition" was “pure speculation” according to the court of appeals. The court also challenged the factual predicate for his opinions concerning the ignition scenario, stating there was no evidence in the record regarding the location of a throw rug, the specific type of vinyl

linoleum on the floor, the glue used to secure it to the under flooring, or specifics concerning the flammability of the vinyl or the glue; all of which were relied upon by Captain Freemen in reaching his conclusions. In essence, the court of appeals felt that the trial judge allowed Captain Freeman to express unsubstantiated theories concerning the fire, without a proper factual foundation.

Plaintiffs' second expert was Ralph Dolence, a fire investigator and technical forensic expert. Mr. Dolence was a master electrician in Ohio with experience in consulting on electrical fires. The Eighth Circuit found this point irrelevant since it did not find sufficient evidence to prove that the fire was electrical in nature. Id. at 519-20.

The Eighth Circuit was concerned that Mr. Dolence never had been to the fire scene, and instead relied on the observations of Captain Freeman. Mr. Dolence examined the photographs taken at the scene, together with some physical evidence removed from the scene. Mr. Dolence's opinion was based, in part, on his elimination of other possible explanations for the fire. The Eighth Circuit was concerned that no testing had been performed by him (or anyone else) to support his fire origin theory. The court concluded that, as with Captain Freeman's testimony, there was an insufficient foundation for Mr. Dolence's testimony, and that he was offering nothing more than rank speculation. Id. at 520.

Mr. Dolence observed that the thermostat and other components of the heater had been destroyed by the fire and left in a crumpled mass. The court noted that the heater had a thermostat that contained a backup high limit control and that Mr. Dolence could not explain how both allegedly had failed simultaneously. The court noted that he had agreed that there was no design defect in the heater and could not identify a specific manufacturing defect. As a result, Mr. Dolence sought the assistance of a metallurgist.

The third expert who testified on behalf of plaintiffs was this metallurgist, Sandy Lazarowicz. Mr. Lazarowicz examined the thermostat contacts and the high limit control contacts from the heater and studied similar components in an exemplar heater located in another townhouse. The court noted that lie was qualified as an expert in the properties of metals but was not an expert in fire origin and cause, baseboard heater operation, or in the design or testing of contacts in such a unit. Id. at 520-21.

Mr. Lazarowicz testified at trial that he believed the thermostat contacts were defectively designed because they were serrated. He explained why the serrated contacts were defectively designed and how they caused the fire: the rough surfaces allowed arcing and material transfer between the contacts. Once again, the court pointed out that Mr. Lazarowicz had performed no tests and was not aware at his first deposition whether the contacts had actually welded together.

The Eighth Circuit determined that Mr. Lazarowicz did not have the necessary experience, either from his work as a metallurgist or from tests performed in connection with the case, to qualify as an expert who could testify whether the high limit control switch was defectively designed or manufactured. As a result, his opinions were nothing more than a subjective belief and unsupported speculation. The court concluded that the purported nexus between his observations of the contacts and his conclusion that the heater was defective was not scientifically sound. Id. at 521.

After discounting all of the testimony of plaintiffs' experts, the court concluded that they were the only witnesses to testify to the theory of liability on which the case was based concerning the defective design or manufacture of the baseboard heater. Because the plaintiffs could not prove the heater was defective when Marley sold it, under North Dakota law of strict

products liability, the plaintiffs, could not prevail, and without the offending testimony, the jury verdict could not stand. Id. at 522.

Circuit Judge Bright offered a vigorous dissenting opinion that pointed out the many flaws in the reasoning of the majority. Judge Bright opined that the jury verdict had adequate support from properly admitted expert testimony and that the plaintiffs' theory of the case relied on the testimony of two properly qualified fire investigators and a properly qualified metallurgist.

Judge Bright also acknowledged the special nature of expert opinion testimony in fire cases that consistently has been recognized by the courts:

> A fire case is different from most accident cases because fires tend to destroy evidence of causation. As a result, theories about the cause of fires inevitably rest on circumstantial evidence. Arson and insurance cases, as well as product liability cases like this one, require expert evaluations to determine the cause of fires. ***The courts traditionally permit qualified fire investigators to express opinions on the cause offires.***

Weisgram,169 F.3d at 522 (emphasis added).

Judge Bright carefully analyzed the testimony of these three experts and correctly noted that even if they lacked specific expertise in certain areas, those issues went to the weight and not the admissibility of their testimony. Id. at 524. The dissenting judge noted that the plaintiffs' experts all based their opinions on personal inspection of the evidence and knowledge acquired from their individual training and experience, and that their opinions had ample factual support. Thus, the dissent reasoned that the district court did not err in submitting the issue of causation to the jury. Id. at 525.

Logically, the Supreme Court's decision in Kumho Tire should have little impact on the qualified experts whose opinions have sound scientific support. The reliability concerns raised in Daubert are easily allayed by well-accepted techniques used by investigators and

experts in determining the origin and causes of fires. N.F.P.A. 921 itself provides a helpftil framework for the fundamentals of fire investigation. The methodology is not new or novel. As was noted by the Committee responsible for the origin and development of N.F.P.A. 921, the goal "is to provide guidance to investigators that is based on accepted scientific principles or scientific research."

Unfortunately, some courts have been misled by the circumstantial nature inherent in proving fire cases, and others have been confused about the relevance to fire cases of the four non-exclusive factors highlighted in Daubert (testability; peer review; rate of error; and general acceptance). As a result, some qualified experts and relevant testimony have been excluded in federal courts since Daubert.

For example, in Pride v. BIC Corp., 218 F.3d 566 (6th Cir. 2000), the United States Court of Appeals for the Sixth Circuit upheld the trial court's exclusion of three of plaintiff's experts in a fire that killed Mr. Pride. The local fire officials and plaintiff's retained experts were prepared to testify through the use of circumstantial and direct evidence that a BIC lighter had caused the fire.

The Sixth Circuit affirmed the exclusion of all of the experts, including the local fire marshal, an origin and cause expert, a mechanical engineer who held a Ph.D. and was the former Dean of Engineering at a local university, and an analytical chemist. Without this expert testimony, the court concluded that plaintiff could not meet its burden of proof, and summary judgment granted to defendant was upheld.

The Pride case is interesting for several reasons. First, it was clear that plaintiff's counsel had missed several deadlines and clearly did not curry favor either with the magistrate who made the original recommendations, the trial judge who adopted those recommendations, or the court of appeals that affirmed the rulings. Second, the court repeatedly pointed out the lack

of testing by the experts, as well as the failure of the origin and cause expert to actually visit the loss site. Third, the court discounted the opinions of the local fire officials that there was no other source of ignition than the lighter that could have accounted for the fire. Finally, experts for the defense testified at the Daubert hearing and substantial (one might say, excessive) importune was ascribed to their methodologies and conclusions.

Four cases decided after Daubert, but before Kumho Tire, offer examples of a better approach. In Smith v. Ford Motor Co., 882 F.Supp. 770, 774 (N.D. Ind. 1995), the court allowed an expert to testify in a product liability fire case over objection by the defendant. In a well reasoned footnote, the court addressed the defendant's attack on the expert's methodology based upon the four Daubert factors:

> In the present case, because of the nature of the expert witness, the four factors laid out in Daubert are not readily applicable. In cases where a novel scientific theory or technique is presented, these four factors are effective means of determining whether such a theory or technique "will assist the trier of fact to understand or determine a fact in issue." The participation of [this expert] is not based on novel scientific evidence or testimony. In this case, he will participate as a fire and accident investigator and convey opinions relating to the Ford F-150 fire. His opinions are based on facts, and investigation, and traditional automobile body repair and fire and accident investigation expertise.

Id. at 774 n. 3. The court concluded that from all indications, the expert "adhered to a reliable method of fire and accident investigation. " Id. at 774.

In a 1996 opinion, a court in New Jersey addressed the Daubert issue on cross motions for summary judgment. Polizzi Meats, Inc. v. Aetna Life & Casualty Co., 931 F.Supp. 328, 336 (D.N.J. 1996). Judge Orlofsky addressed the "astounding contention" that none of the defendant insurer's experts could testify because of a lack of "scientific proof" about the cause of the fire. The trial judge succinctly and firmly stated that:

> Nothing in Daubert suggests that trial judges should exclude otherwise relevant testimony of police and fire investigators on the issues of the origins and causes of fires.

Id. at 336.

The court short circuited an attempt to exclude proper expert testimony relating to the origin and cause of the fire based upon that party's "seriously flawed reading" of Daubert. Id.

In a 1997 decision, a federal judge in Kansas denied a motion for summary judgment seeking the exclusion of plaintiff's experts in a product liability suit involving a death by fire. Patterson v. Conopco, Inc., 999 F. Supp. 1417 (D.Kan. 1997). Although the context was a pre-trial motion rather than post-trial as in Weisgram, the cases offer a distinct contrast.

Both cases involved a tragic death involving a fire without any eyewitness testimony. As such, the experts attempted to reconstruct the origin and cause based, in part, on circumstantial evidence. In both cases traditional investigations were conducted in an attempt to first determine the area of origin of the fire and then the cause. Nevertheless, unlike the Eighth Circuit, Senior Judge Brown determined that the two proposed experts could testify on behalf of plaintiff because the opinions of the expert chemist were based "on the totality of the circumstances and . . . he is drawing rational inferences from circumstantial evidence." Id. at 1419. The court held that the failure to conduct tests to support the opinion was not determinative alone and the opinion was based on scientific knowledge that could assist the jury. As a result, the motion for summary judgment was denied and, presumably, the testimony would be properly admitted at trial.

In United States v. Wolf, 1999 U.S. Dist. LEXIS 20736 (D.S.D. Dec. 6, 1999), the defendant sought to exclude the testimony of the government's origin and cause expert in a criminal arson trial pursuant to Daubert and Rule 702 of the Federal Rules of Evidence. The government's expert was the South Dakota State Fire Marshal.

The State Fire Marshal examined the scene ten days after the fire and concluded that an accelerant was used. This testimony was based upon substantial charring in the floor joists directly below a crawl space in the rear corner bedroom of the defendant's house and by the elimination of any accidental ignition sources. The defendant sought to exclude the fire marshal's opinions, contending they were mere speculation since no samples had been taken, no scientific methods or procedures were employed, and the fire marshal's origin and cause theory had not been subjected to peer review.

The trial court recognized that the fundamental purpose of the reliability inquiry is to rule out expert testimony that is based on subjective belief or unsupported speculation. The court examined the factors listed in Daubert but determined they were not helpful in deciding whether the fire marshal's testimony would assist the jury:

> These factors, while perhaps pertinent, are not particularly helpful in analyzing whether [the state fire marshal's] opinions and conclusions would assist the jury in deciding this case. [Citations omitted] He does not seek to offer testimony about an untested novel concept such as might be found in a case involving presentation of purely cutting-edge scientific testimony. Instead, he proposes to testify based on his vast fire investigation experience as to how and where the fire began. Thus, whether [the state fire marshal's] proffered expert opinions have been subject to peer review, whether there is a known error rate and whether his theory or technique enjoy general acceptance within the relevant scientific community are not particularly appropriate and useful considerations, especially in a case such as this one where an orthodox scientific methodology is involved.

Id. at 6.

The trial court allowed the expert to testify although his investigative protocol was "somewhat individualized in nature" because it was consistent with the basic methodology and procedures recommended by the NFPA. The court also did not require strict adherence to

NFPA 921, noting that the requisite "intellectual rigor" for origin and cause experts was followed.

In several cases decided after Kumho Tire, courts also properly allowed expert testimony in fire or explosion cases despite Daubert challenges. In Call v. State Industries, 2000 WL 1015076 (10th Cir. July 24, 2000), the United States Court of Appeals for the Tenth Circuit, in an unpublished decision reported at 221 F.3d 1351 (10th Cir. 2000), rejected the Daubert challenge to plaintiffs' experts in a subrogation claim arising out of a fire. The defendant contended that two of the experts could not testify because they had not established a precise "rate of error" and that their results were not "subjected to peer review and publication." The Tenth Circuit recognized that Kumho Tire emphasized that the four factors set forth in Daubert were not a definitive checklist or test.

In Hynes v. Energy West, Inc., 211 F3d 1193 (10th Cir. 2000), the Tenth Circuit also turned aside a defendant's attempt to overturn a jury verdict in a case involving an explosion and fire, based upon alleging improper admission of expert testimony. As in Call, the court determined that the trial judge did not abuse its discretion "when it chose to admit expert testimony of Dwayne Kniebs concerning industry practice and the neutralization and oxidation theories. Kneibs had extensive scientific credentials and he was able to articulate a scientific process by which neutralization and oxidation occurs." Id. at 1205. The court recognized that the primary dispute concerned the application of certain scientific principles to the soil conditions prevailing in the area of the explosion and that was largely a matter of cross-examination and impeachment.

In perhaps the most interesting Daubert decision, Thurman v. Missouri Gas Energy, 107 F. Supp. 2nd 1046 (W.D. Mo. 2000), the court granted in part and rejected in part both parties' attempts to preclude expert testimony arising from a fire and gas explosion that

occurred in a telecommunication vault. The most interesting fact was that the escape of natural gas that led to the explosion occurred in a pipe buried 18-1/2 feet below street level and the specific cause of the failure was not determined because the defendant did not excavate the pipeline based upon the recommendation of the Missouri Public Service Commission. In light of that crucial fact, which did not appear to be the fault of either party, the court considered challenges to the expert testimony of both the plaintiff and the defendant.

The court implicitly recognized the problem that all the experts faced without having actually seen the pipe. "In order to be able to state an opinion of the cause of the pipeline's failure, [the expert] must be able to offer a credible explanation as to why he supports one theory of failure over another. Since the pipeline was never excavated and physically examined, [the expert] (as well as others) cannot explain how or why he arrived at his ultimate opinion." Id. at 1056. The court appeared to reach a Solomonic decision by permitting several of the experts "to testify as to the basis for [each] opinion but (held that they) will not be permitted to state the opinion." Id. at 1057.

Weisgram and Pride are difficult to reconcile with the Third Circuit's 1983 decision in Breidor and certain of the opinions discussed above. It is apparent from the Weisgram opinion that the court believed the version of how the fire started as opined by defendant Marley's experts. Weisgram, 169 F.3d at 518 n.4. The Sixth Circuit in Pride likewise appeared to have credited the two defense experts who were permitted to testify at the Daubert hearing "to assist the court in evaluating the methodologies utilized by Pride's experts in reaching their conclusions on causation and product defect." Pride, 218 F. 3d at 573. Judge Bright's conclusion in his dissent in Weisgram aptly summarizes exactly why, in our view, the majority erred:

> In sum, the parties presented two reasonable theories about the cause of the fire. The experienced and able trial judge admitted the

> testimony of the plaintiffs' experts. He also permitted expert witnesses to testify to Marley's theory of the case. A North Dakota jury evaluated the evidence and determined that the plaintiff should recover damages. As a Court, we are only called upon to determine whether the district court abused its discretion in permitting the experts to testify. Had the jury rendered a verdict for Marley, we would not be in a position to say that the district court abused its discretion in admitting the testimony of the defense experts. This controversy represents a typical case to be decided by a jury. This Court ought not overturn both the trial judge and the jury. Accordingly, I dissent.

Id. at 526. Applying Daubert to experts used in fire cases as mandated by Kumho Tire should not result in the exclusion of experts who for years have been held qualified to offer opinions concerning the origin and cause of fires.

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