

**United States Court of Appeals  
FOR THE EIGHTH CIRCUIT**

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No. 97-3735  
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Chad Weisgram, individually and on \*  
behalf of the heirs of Bonnie Jo \*  
Weisgram, decedent, \*

Appellee, \*

v. \*

Marley Company, a Delaware \*  
Corporation and its subsidiary, Marley \*  
Electric Heating Company, a \*  
Delaware Corporation; United \*  
Dominion Industries, Inc., a \*  
Delaware Corporation, \*

Appellants. \*

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State Farm Fire & Casualty Insurance \*  
Company, \*

Appellee, \*

v. \*

Marley Company, a Delaware \*  
Corporation; Marley Electric Heating \*  
Company, a Delaware Corporation; \*  
United Dominion Industries, Inc., a \*  
Delaware Corporation, \*

Appellants. \*

Appeal from the United States  
District Court for the  
District of North Dakota.

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Submitted: November 16, 1998  
Filed: February 23, 1999

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Before BOWMAN, Chief Judge, BRIGHT, and MAGILL, Circuit Judges.

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BOWMAN, Chief Judge.

Marley Company appeals from the judgment of the District Court, entered upon a jury verdict, awarding damages to Chad Weisgram, individually and on behalf of the heirs of Bonnie Weisgram, and to State Farm Fire and Casualty Company. We vacate the judgment and remand for entry of judgment as a matter of law in favor of Marley.

I.

On December 30, 1993, at approximately 6:00 a.m., firefighters were called to the town house of Bonnie Weisgram in Fargo, North Dakota, when an off-duty firefighter noticed flames around the front entrance to the home. The front door of the residence was open (although the storm door was closed), notwithstanding the sub-freezing outdoor temperature. Firefighters entered the town house and found Bonnie Weisgram's body lying face down on top of a large, broken mirror, in the upstairs bathroom of the split-entry residence. They also found an open window in Weisgram's upstairs bedroom, which adjoined the bathroom where the body was found. The cover of the smoke detector located in the ceiling of the upstairs hallway had been removed and was found on the carpeted floor of Weisgram's bedroom, where it had been laying since before the fire produced the soot that covered the exposed areas of carpeting. A folding chair was on the floor, folded up, near the

detector cover. Upstairs in the living room, an L-shaped sectional sofa was badly damaged by fire in both sections. The back of one section of the sofa was along a metal railing that was open to the entryway and immediately to the right (north) of the entrance at about shoulder level when standing in the entryway; the other section, equally damaged, was along the adjoining (east) wall upstairs. To the left of the entrance, directly in front of the south entryway wall, there was a hole burned through the floor of the entryway. A fifteen-year-old baseboard heater manufactured by Marley had been mounted on that south wall before the fire. There was structural fire damage around the entrance of the town house. The remainder of the residence, including the area downstairs from the entryway, suffered damage from smoke, heat, and water, but no fire damage.

An autopsy determined that Weisgram had died from smoke inhalation, that is, carbon monoxide poisoning, at approximately 2:30 in the morning. There is no dispute that the likely source of the carbon monoxide was the smoldering sofa. Further, Weisgram's blood alcohol level was 0.15, and there was evidence that she had taken a drug that generally is prescribed to relieve pain and as a sleep aid, although it was not clear from the tests whether she took it that night. She was last seen alive at 11:00 p.m. the evening of December 29 by her fiancé, who observed her drink an alcoholic beverage and smoke a cigarette before he left.

Weisgram's adult son, Chad,<sup>1</sup> individually and on behalf of Bonnie Weisgram's heirs, sued Marley for the wrongful death of his mother. State Farm, which insured the Weisgram home, sued Marley to recover insurance benefits paid for the damage to the Weisgram town house and its contents, and (by assignment) benefits paid for the damage to the adjoining Ferguson town house. The cases were consolidated and tried to a jury on a theory that Marley was strictly liable because the baseboard heater

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<sup>1</sup>Chad was not at home the night of the fire. Bonnie Weisgram had another adult son, Ryan, who was not living in the home at the time of the fire.

was defective. The jury awarded \$500,000 to Chad and the heirs and \$100,575.42 to State Farm. Marley's motion for judgment as a matter of law (JAML) and its motion for a new trial both were denied. Marley appeals.

## II.

We review de novo the District Court's decision to deny Marley's motion for JAML. See Finley v. River N. Records, Inc., 148 F.3d 913, 917 (8<sup>th</sup> Cir. 1998). We view the evidence in the light most favorable to Chad Weisgram and State Farm, and will not reverse the court's decision unless all of the evidence properly admitted "points [Marley's] way and is susceptible of no reasonable inferences sustaining [Weisgram and State Farm's] position." Wright v. Willamette Indus., Inc., 91 F.3d 1105, 1106 (8<sup>th</sup> Cir. 1996).

We initially consider the plaintiffs' burden of proof in this strict products liability case. In order to prevail under North Dakota law, the plaintiffs were required to prove by a preponderance of the evidence that the 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." Endresen v. Scheels Hardware & Sports Shop, Inc., 560 N.W.2d 225, 229 (N.D. 1997); see also N.D. Cent. Code § 28-01.3-06 (Supp. 1997) ("No product may be considered to have a defect or to be in a defective condition, unless at the time the product was sold by the manufacturer or other initial seller, there was a defect or defective condition in the product which made the product unreasonably dangerous to the user or consumer."). After hearing oral argument, it is not entirely clear to us whether the plaintiffs are alleging that the heater had a design defect, a manufacturing defect, or possibly no defect at all. In any

case, however, we hold that JAML should have been granted for Marley.<sup>2</sup> The District Court abused its discretion in allowing certain opinion testimony at trial. Once that testimony is removed from consideration, the evidence properly admitted is insufficient to prove by a preponderance that the heater was defective at the time Marley sold it, much less that any purported defect rendered the heater unreasonably dangerous and proximately caused the fire that resulted in the tragic death of Bonnie Weisgram and the damage to her home. See McKnight v. Johnson Controls, Inc., 36 F.3d 1396, 1400 (8<sup>th</sup> Cir. 1994) ("A motion for [JAML] presents a legal question to the district court and to this court on review: 'whether there is sufficient evidence to support a jury verdict.'") (citation to quoted case omitted). Thus Marley is entitled to judgment as a matter of law on plaintiffs' claims.

### III.

We first examine the challenged testimony. Under Federal Rule of Evidence 702, "a witness qualified as an expert by knowledge, skill, experience, training, or education" may give opinion testimony if, and to the extent, "scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or

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<sup>2</sup>We reject any contention that we are required to remand for a new trial because our failure to do so would deny the plaintiffs the opportunity to reopen discovery and identify additional witnesses who might testify to their theory of liability. Although Federal Rule of Civil Procedure 50(d) certainly gives this Court the discretion to remand for a new trial, we can discern no reason to give the plaintiffs a second chance to make out a case of strict liability. See Wright v. Willamette Indus., Inc., 91 F.3d 1105, 1108 (8<sup>th</sup> Cir. 1996) (reversing denial of JAML because improper expert testimony was admitted by the district court); see also Peitzmeier v. Hennessey Indus., Inc., 97 F.3d 293, 296 (8<sup>th</sup> Cir. 1996) (affirming district court's decision to grant summary judgment on the grounds that certain expert testimony was inadmissible "and that based on the admissible, undisputed evidence [defendant manufacturer] was entitled to judgment as a matter of law"), cert. denied, 117 S. Ct. 1552 (1997). This is not a close case. The plaintiffs had a fair opportunity to prove their claim and they failed to do so.

to determine a fact in issue." It is the role of the district court to make certain that testimony admitted under Rule 702 "is not only relevant, but reliable." Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 589 (1993); see also Wood v. Minnesota Mining & Mfg. Co., 112 F.3d 306, 309 (8<sup>th</sup> Cir. 1997).<sup>3</sup> As we explain below, portions of the testimony from three of the plaintiffs' witnesses were unreliable, and the District Court abused its admittedly broad discretion in allowing the suspect testimony. See Peterson v. City of Plymouth, 60 F.3d 469, 475 (8<sup>th</sup> Cir. 1995) (standard of review). Further, we can say that the errors were not harmless, as they had "'substantial influence' on the jury's verdict." Id. (quoting McKnight, 36 F.3d at 1405).

#### A.

We begin with the testimony of Dan Freeman, the Fargo fire captain who arrived with the first fire truck on the scene of the fire at the Weisgram home. He also was the firefighter who did the investigation for the Fargo fire department. Freeman testified that he had considered whether careless smoking might have started the fire in the sofa, but he rejected that possibility because he saw no smoking materials in the home and because he did not think the burn pattern in the sofa

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<sup>3</sup>Now pending before the Supreme Court is the case of Kumho Tire Co. v. Carmichael, No. 97-1709 (argued Dec. 7, 1998), which raises the question whether *all* expert testimony admitted pursuant to Rule 702 is subject to review under the four reliability factors set forth in Daubert, or whether it is only "scientific" testimony to which the test applies. Cf. Jenson v. Eveleth Taconite Co., 130 F.3d 1287, 1297 (8<sup>th</sup> Cir. 1997) (noting that "[t]here is some question as to whether the Daubert analysis should be applied at all to 'soft' sciences such as psychology"), cert. denied, 118 S. Ct. 2370 (1998). We need not get into that thicket ourselves, as the testimony at issue here should have been excluded under Rule 702 as unreliable whether or not the four Daubert factors are considered. Although the Daubert Court had before it only the question of the admissibility of scientific testimony, see 509 U.S. at 590 n.8, the general principles of reliability and relevance for which we cite Daubert obviously apply to all Rule 702 expert testimony, regardless of subject matter.

indicated that the fire began as the result of careless smoking.<sup>4</sup> He opined that the fire started in the area of the baseboard heater and that "radiated heat . . . ignited the material on the backside of that couch." Trial Tr. of May 20, 1997 (testimony of Dan E. Freeman), at 34. The sofa was six to eight feet away from the heater at shoulder height and shielded at least partially from any radiated heat or flame by the open front door, which was constructed of insulated steel. The witness then was allowed to testify, over objection, that the fire started because "we had a malfunction of the heater." Id. at 63. Notwithstanding Freeman's admission that he was "not an electrical expert" and that he did not "know what happened with the heater," he nevertheless was allowed to testify that he "believe[d] that we had a runaway of that heater." Id. at 64. Although Freeman clearly was qualified as a fire cause and origin expert, there is no question that he was not qualified to offer an opinion that the Weisgram heater malfunctioned and he should not have been permitted to do so.

Moreover, Freeman's testimony regarding the events that followed the surmised "runaway" amounted to nothing more than blatant speculation:

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<sup>4</sup>The testimony of Marley's witnesses advanced this scenario for the cause and origin of the fire: At some time that night, Bonnie Weisgram dropped a lighted cigarette behind a cushion of the sofa, which eventually started a smoldering fire. The smoke detector activated, and Weisgram disabled it. Believing she had doused the fire in the couch, she removed the sofa cushion to the entryway. At some point, she opened the bedroom window and the front door to clear the house of smoke. The cushion and the sofa continued to smolder, producing the smoke and the carbon monoxide that eventually killed Weisgram. Under the influence of the alcohol she had consumed and the sleeping aid she had taken, she was unaware that the fires continued to burn until it was too late. The smoldering cushion in the entryway slowly burned through the floor and eventually caused the flaming fire around the entrance that was spotted at 6:00 a.m.

We need not—and do not—adopt Marley's version of events in order to conclude that JAML should have been granted to Marley.

I believe that we ignited nearby combustibles, namely, the, possibly the throw rug or area rug that was on that vinyl floor was very possibly pushed up against that heater. . . . That up against the heater would contain the heat, would trap it, would cause it to build up to the point where you could have had ignition of that cellulose based product [the jute backing on the rug]. . . . In addition to that, the heat build up would start to cause other things to start what we call off gassing. The vinyl floor is going to warm up, the vinyl flooring is stuck to the floor with a glue, a plastic. There are several types on the market but one of them there is an asphalt base type. There is another type . . . ones I have looked into have got products in them that will off gas and ignite such as a naphtha, ethylene glycol. . . . It's a solvent. Basically it's an accelerant. It will off gas and it will cause vapors to disperse. It will loosen up. Those vapors are going to try to find a way to escape from underneath that vinyl. Normally that would be at the edge of the wall where the vinyl floor meets the wall. I believe the ignition temperature of naphtha is probably somewhere in the neighborhood of 400, 450 degrees. The flash point is considerably lower than that. . . . [B]y flash point I mean it will give off enough vapors to ignite briefly if there is a heat source to ignite.

Id. at 64, 65-66. Now, as a qualified expert in fire investigation, Freeman was free to testify—as he did—that the burn and smoke patterns and other physical evidence indicated that, in his opinion, the fire started in the entryway and radiated to the sofa. Freeman's further testimony, however, was patent speculation, as there was no evidence in the record regarding the location of the throw rug when the fire started, the type of vinyl linoleum on the floor, the glue used some fifteen years prior to secure the vinyl to the underflooring, or the flammability of the vinyl or the glue.<sup>5</sup>

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<sup>5</sup>As the individual assigned to investigate the Weisgram fire, Freeman would have been responsible for taking samples of these items for analysis. Nevertheless, he sought only samples of the burned rug from the area around the burn-through in the floor in the entryway (and Freeman had another firefighter retrieve those samples after Freeman left the scene). Freeman had these samples tested for composition and to see whether there was an accelerant present. The only other evidence gathering

While Freeman was qualified to testify that he thought the fire originated in the area of the baseboard heater, we think the court abused its discretion when it permitted Freeman to "run away" with his own unsubstantiated theories: that the throw rug somehow blocked the heater, that the rug then ignited, that the heater transferred sufficient heat to the floor so that the adhesive under the vinyl flooring (an adhesive whose composition and other characteristics are unknown) "off gassed," and that the heater radiated enough heat so that those vapors--whatever they were--ignited. Freeman's qualification as a fire investigator did not give him free rein to speculate before the jury as to the cause of the fire by relying on inferences that have absolutely no record support. No foundation was established for Freeman to testify to the extent he did, and the court abused its discretion in allowing the jury to hear this testimony.

## B.

Marley also challenges the reliability of the testimony of Ralph Dolence. Within days after the fire, Freeman told Dolence "that we had a fire that appears to have originated in and around an electric baseboard heater" and sent him the remains of the baseboard heater. Id. at 81. Dolence testified as a "fire investigator" and "technical forensic expert." Trial Tr. of May 21, 1997 (testimony of Ralph Dolence), at 4. As a master electrician in Ohio, he also had experience consulting on electrical fires, although that is irrelevant in this case as there is no contention that the Weisgram fire was electrical. He denied being an "expert electrician" but testified that he was "an electrical expert in electrical things." Id. at 108-09.

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Freeman did was to take some photographs and to retrieve the burned baseboard heater. It is clear from his testimony that from the very beginning Freeman thought the baseboard heater caused the fire, see, e.g., Trial Tr. of May 20, 1997 (testimony of Dan E. Freeman), at 77-78, 81, which probably explains the limited evidence he collected. State Farm, which also was early on the scene, did not gather any evidence either, as far as we can tell from the record.

Dolence's theory of the fire, not surprisingly, was the same as Freeman's. Dolence never went to the Weisgram town house. As he testified at trial, he drew his conclusions largely from the observations Freeman made at the scene of the fire: "Based on the examination of the heater and the physical evidence that Captain Freeman and I had discussed and the photographs which I interpret as physical evidence, the hole in the floor in my opinion was made by a couple things." Id. at 50-51. Dolence went on to conjecture that a small rug was pushed over two-thirds of the heater, that the heat was "trapped in there and was focused down on to the . . . linoleum," that "volatile vapors from the adhesive come [sic] into the location of the heater," and that "[t]he ignition of those vapors is what caused this fire." Id. at 51. And Dolence's basis for his theory? "There is no other explanation. Everything else is ruled out . . . by Captain Freeman." Id. at 52. Dolence did no testing to bolster this theory and admitted that he knew of no tests that anyone had conducted to support a similar theory of fire cause and origin. See id. at 171. As with Freeman's testimony, there was insufficient foundation for Dolence's testimony; the ostensibly expert opinion testimony he offered was rank speculation.

Dolence noted that the "thermostat or other components" of the heater were destroyed, "in a crumpled mass," id. at 88, and so he did not test them. He nevertheless testified that his theory of how the fire started—runaway heater, off gassing, ignition of vapors—could be true only if the thermostat (designed to shut the heater off at a comfortable room temperature set by the user) failed, followed immediately by the failure of the backup high limit control (designed to shut the heater off when it sensed a temperature of 190 degrees.) See id. at 90-92, 129. Therefore, he opined, after fifteen years of operating without incident, both the thermostat and the high limit control suddenly and simultaneously "did not function" to shut the heater off. Id. at 105. To be "fair and honest," however, Dolence was compelled to testify that he could not identify what caused the heater to run away and that he had "no idea what caused the thermostat to fail." Id. at 126; see also id. at 137, 187. He also could not determine what caused the high limit control to fail. See

id. at 138, 187. Finally, he agreed with the proposition that there were no design defects in the heater, in part because, during testing, he could not create a similar overheating episode in the undamaged exemplar Marley heater that had been retrieved after the fire from the adjoining Ferguson town house. See id. at 139, 143. He thought there was the possibility of a manufacturing defect in the Weisgram heater, but he had been unable to identify one. See id. at 145-46, 148. Upon examining the contacts<sup>6</sup> of both the thermostat and the high limit control of the Weisgram heater, Dolence testified, "I was bothered by the condition of things I saw on some of this evidence." Id. at 100. Therefore he sought the assistance of a metallurgist, but Dolence could offer no opinion of his own about the contacts or what may have caused the presumed failure of the thermostat and the high limit control. See id. at 101.

In these circumstances, the District Court abused its discretion by permitting Dolence to testify as an expert witness regarding matters about which he could only speculate. As with Freeman's testimony, there is no reasonable factual basis for Dolence's opinions. Dolence's own testimony attests to the fact that he was offering nothing more than pure conjecture as to whether or not the Weisgram heater was defective. The testimony therefore was unreliable under Rule 702 and should have been excluded.

### C.

The metallurgist Dolence contacted was Sandy Lazarowicz. Dolence told Lazarowicz his theory of the fire and asked him to take a look at the Weisgram heater. Lazarowicz examined the thermostat contacts and the high limit control contacts from the heater and studied the same components in the Ferguson heater. He was qualified

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<sup>6</sup>When the contacts are closed, that is, touching, the circuit is complete and current flows through the appliance. The circuit is broken—current through the unit is cut—when the contacts are separated, or open.

as an expert in the properties of metals. Admittedly, however, he was not an expert in fire cause and origin, in baseboard heater operation, or in the design or testing of contacts in such a unit. See Trial Tr. of May 27, 1997 (testimony of Sandy Lazarowicz), at 16-17, 64.

He testified that the thermostat contacts were defectively designed because they were serrated. The rough surfaces caused arcing and material transfer between the contacts. He theorized that "the continual usage and build up of defects on the surface" of the contacts must have caused them to weld, and that they could not then pull apart (at least not until the heat from the fire in the home softened the weld). Id. at 81. Thus, he said, there was a closed circuit, the heater did not shut off, and that is why the unit overheated. He formulated his theory knowing practically nothing about the Weisgram heater, or any other baseboard heater for that matter. For example, when he formed his opinions he was unaware of the heater's wattage or the amperage it drew, and therefore could not say if the thermostat contacts could have reached a high enough temperature to melt the metal and to form a weld *before* the fire. See id. at 69-71, 73. He performed no tests to determine whether it was even theoretically possible that the contacts could get sufficiently hot to weld during operation of the heater. In fact, in his first deposition, Lazarowicz was unable to say for certain that the contacts actually had welded, notwithstanding his examination of them under an electron microscope. Only after closer examination of the contacts from the Ferguson exemplar was he able to see the evidence of welding in the Weisgram contacts. We think the District Court abused its discretion when it permitted this testimony from Lazarowicz.

Further, as we have explained, the heater had a backup system that would prevent it from dangerously overheating even if the heater ran amok because the thermostat failed to shut it off: the high limit control. In order for the heater to be defective in the way the plaintiffs theorize, the high limit control had to fail to shut off the electrical current to the heater at the very same time that the thermostat was

failing. Lazarowicz testified that the high limit contacts did not open when the unit was energized (receiving current), but opened only after the fire was well underway. He theorized that this failure may have occurred because the high limit control's temperature sensing mechanism was placed within the unit in a location where it could not detect the actual temperature of the heater.<sup>7</sup> He had metallurgic evidence for the opinion that the contacts did not open while electricity was flowing through the heater (and, in fact, other witnesses noted the same evidence). But he had no metallurgic reason for his conclusion that the device was not properly sensing the temperature, because, of course, that is not a metallurgic issue. Lazarowicz testified that he had performed no tests on the Ferguson exemplar to see if its high limit switch functioned properly, or to determine if in fact there was a defect (in design) in that similar heater. He did not have the necessary experience—either from his work as a metallurgist or from tests performed in connection with this case—to be qualified as an expert who could testify that the high limit control failed because it was defectively designed or manufactured.

Lazarowicz's opinions amount to no more than "subjective belief or unsupported speculation." Daubert, 509 U.S. at 590. We conclude that the nexus between his observations of the contacts and his conclusion that the heater was defective is not scientifically sound. He admittedly had very limited experience with electrical contacts in small appliances and no experience with how contacts function in baseboard heaters. "[T]here is simply too great an analytical gap between the data and the opinion proffered." General Elec. Co. v. Joiner, 118 S. Ct. 512, 519 (1997). Therefore, his testimony was unreliable and it was an abuse of discretion to allow it.

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<sup>7</sup>At oral argument, counsel for plaintiffs said the high limit control was not defective and did not fail, but simply did not shut off the heater when it should have. It is not clear to us, then, what the plaintiffs' theory of liability now is. We continue with our analysis, however, under the theory submitted to the jury: strict products liability because of a design or manufacturing defect.

#### D.

We have read very carefully the entire transcript of the trial in this case. Freeman, Dolence, and Lazarowicz were the plaintiffs' only witnesses to testify to the theory of liability on which this case was based: that the baseboard heater was defective in design or manufacture.<sup>8</sup> Neither Freeman nor Dolence were qualified under Rule 702 to testify that the heater was defective, and it was an abuse of the District Court's discretion to allow their testimony to that effect (not to mention their rampant speculation about how the "runaway" heater then might have ignited the fire). Further, Lazarowicz's testimony about the defective thermostat contacts and the placement of the high limit control sensor also was not sufficiently reliable under Rule 702 to have been admitted in evidence. Because these witnesses offered the only evidence of defect, their testimony obviously had a substantial influence on the jury's decision to find Marley strictly liable for damages. Bonnie Weisgram's death in this fire was a tragedy and the damage to the town houses was unfortunate. But if the heater cannot be proven to have been defective when Marley sold it, then under North Dakota law of strict products liability the plaintiffs cannot prevail—even assuming Freeman and Dolence are correct about the off gassing adhesive and the rest of their theory relating to the cause of the fire. Without the testimony at issue, the jury's verdict cannot stand.

#### IV.

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<sup>8</sup>Dolence testified that the heater was *not* defectively designed, but that it may have had a manufacturing defect that he simply could not identify. Lazarowicz testified that the defects *were* in the design of the heater--the serrated contacts on the thermostat and the placement of the high limit control sensor--but he also said there was *no* design defect in the high limit control. These contradictions from the plaintiffs' own witnesses are yet another indication that the jury reached a finding that the heater was defective only by engaging in speculation.

Marley raises a number of other issues, all of which it is unnecessary for us to address in order to resolve the appeal.

The plaintiffs' motion for relief under Federal Rule of Appellate Procedure 38 for certain arguments advanced by Marley on appeal (arguments we do not address) is denied.

V.

The judgment for the plaintiffs is vacated and the case is remanded to the District Court with instructions to grant Marley judgment as a matter of law.

BRIGHT, Circuit Judge, dissenting.

I dissent. I would deny Marley's motions for a new trial and judgment as a matter of law. The jury verdict has adequate support from properly admitted expert testimony. The plaintiffs' theory of the case relied on the testimony of two properly qualified fire investigators and a properly qualified metallurgist. This testimony provided evidence that the fire originated with the heater and that defects in the thermostat contacts and the placement of the high limit control contributed to the fire. The experts arrived at their conclusions by personally inspecting the evidence from the fire scene using accepted investigative techniques. Although each expert may have testified on matters outside his particular area of expertise, these matters went to the weight and not the admissibility of the testimony. Moreover, the experts' experience lent support to this testimony.

Fire cases differ 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 of fires.

For example, in Talkington v. Atria Reclamelucifers Fabrieken BV (Cricket BV), 152 F.3d 254 (4th Cir. 1998), a product liability case, the court affirmed a jury verdict for the plaintiffs which rested on the testimony of two fire investigators. The fire investigators discovered the body of a child in close proximity to a cigarette lighter and a sofa. See id. at 260. They also conducted a test in which they compared the sofa to a sofa ignited with a cigarette and an open flame. See id. at 265. At trial, the investigators testified that the fire occurred because the child ignited the sofa with the cigarette lighter. See id. at 264-65. The court upheld the admission of this testimony. The experts qualified as fire investigators and gave reasoned explanations for rejecting alternative explanations, including the defense theory that a cigarette started the fire. See id. at 264-66.

Similarly, in Marshall v. Humble Oil & Refining Co., 459 F.2d 355 (8th Cir. 1972), this court affirmed a jury verdict finding the defendants liable for an explosion in a poorly ventilated gas station storeroom. The plaintiffs contended that the explosion occurred when a spark from an air compressor switch ignited accumulated gas vapors. See id. at 357-58. This theory rested on the discovery of soot in the storeroom after the fire, testimony that the storeroom door was found closed immediately after the explosion, and the fact of the explosion itself. See id. at 358-60. This court held that the plaintiffs presented sufficient evidence of causation even though the compressor switch itself showed no fire damage. See id. at 359-60.

In this case, the jury was required to determine the cause of the fire that killed Bonnie Weisgram in her home. Plaintiffs Weisgram and State Farm argued that a defect in the baseboard heater caused the fire. The court must determine whether the plaintiffs presented reliable evidence of their theory by experts who possessed the

necessary qualifications.<sup>9</sup> Under Rule 702, a witness can testify as an expert if his knowledge qualifies him to offer an opinion that will assist the trier of fact in arriving at the truth. See Fed. R. Evid. 702; Pelster v. Ray, 987 F.2d 514, 526 (8th Cir. 1993). Rule 702 reflects an attempt to liberalize the rules governing the admission of expert testimony. See Jenson v. Eveleth Taconite Co., 130 F.3d 1287, 1298 (8th Cir. 1997). The rule "is one of admissibility rather than exclusion." Id. (quoting Arcoren v. United States, 929 F.2d 1235, 1239 (8th Cir. 1991)). We review district court decisions on the qualifications and reliability of experts for an abuse of discretion. See General Elec. Co. v. Joiner, 118 S. Ct. 512, 517 (1997). With this standard in mind, I review the district court's decision to admit the testimony of the plaintiffs' experts.

The plaintiffs first called Captain Dan Freeman of the Fargo Fire Department. Freeman was the first person to arrive at the fire scene. Freeman testified as a fact witness and to some extent as an expert. Freeman testified that the fire originated in the entryway. Upon arrival, he saw a fire burning on the south side of the entryway. He saw no other fire in the house. After searching for survivors and removing Bonnie Weisgram's body, Freeman began to investigate the cause of the fire. He first considered the sofa as a source of the fire, but discarded that possibility when he inspected the sofa and the surrounding area. The sofa exhibited signs of smouldering combustion but not flaming combustion. Freeman saw no charring on the floor beneath the sofa or damage to the ceiling above the sofa. Furthermore, a piano located within 1½ feet of the sofa remained in good condition. As Freeman continued

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<sup>9</sup>In answering that question in the negative, the majority cites Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) for support but also recognizes that the Daubert analysis for the admission of expert scientific testimony may not apply to non-scientific testimony. Maj. Op. at 6 n.3. As the majority has noted, Carmichael v. Samyang Tire, Inc., 131 F.3d 1433 (11th Cir. 1997), cert. granted sub nom., Kumho Tire Co. v. Carmichael, 118 S. Ct. 2339 (1998), now before the Supreme Court, raises the issue whether the factors enunciated in Daubert for the admissibility of scientific evidence also apply to non-scientific evidence.

to investigate, he determined that the fire originated in the entryway and spread to the sofa. The sofa suffered the most damage on its backside, which was exposed to the entryway, and there was charring on the woodwork inches from the backside of the sofa. Freeman testified that a fire strong enough to char the woodwork could have ignited the sofa. Freeman also saw evidence of flaming combustion in the entryway. A two-foot long hole had been burned through the floor underneath the heater and the ceiling above the heater had suffered significant damage.

The plaintiffs next called Ralph Dolence, a professional fire investigator, to testify as an expert witness. Dolence listened to Freeman's description of the fire scene and inspected the heater and photographs of the fire scene. Dolence also inspected and tested an exemplar heater from a nearby house. Dolence testified that the fire originated with the heater. In his opinion, a throw rug pushed up against the heater caused heat to accumulate in and around the heater.<sup>10</sup> The excess heat caused the glue on the vinyl flooring beneath the heater to vaporize and ignite. The fire spread to the walls and ceiling in the entryway and eventually to the sofa in the living room. To support his conclusions, Dolence testified that burn patterns on the heater indicated that it had been partially covered during the fire and that it had been exposed to extreme heat underneath. Dolence also testified that asphalt-based glue used in vinyl flooring has an ignition temperature of approximately 450°. Dolence's testing of the exemplar heater demonstrated that the heater could reach a temperature of 750°.

As their third expert, the plaintiffs called Sandy Lazarowicz, a metallurgist. Lazarowicz had performed failure analysis on the thermostat contacts and had inspected the high limit control. Lazarowicz's testimony provided evidence of defects in the thermostat contacts and the placement of the high limit control that resulted in

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<sup>10</sup>Three frequent visitors to the Weisgram home testified that an entryway throw rug would frequently get pushed up against the heater by the movement of the entryway door.

their failure to shut down the heater at the time of the fire. Lazarowicz testified that the thermostat contacts were welded together at the time of the fire. He testified that serrations on the contact surfaces and mismatching of the contacts caused electrical arcing and material transfer, which in turn caused the contacts to weld.<sup>11</sup> Lazarowicz also testified that the high limit control did not detect the heat build-up before the fire because it was placed behind a deflector shield.

Freeman and Dolence possessed ample qualifications to testify as experts on the cause of the fire. Freeman was a certified fire investigator and had investigated over 100 fires in addition to completing 400 hours of training in fire and arson investigation. Dolence had been investigating fires for over fifteen years and had directed fire investigation units in two municipalities. While neither Freeman nor Dolence had worked with the type of heater found in the Weisgram home, they both had experience investigating fires caused by heaters and other electrical appliances. Thus, in my view they were qualified to offer opinions on whether the heater caused the Weisgram fire. Dolence possesses particularly relevant qualifications. He is a master electrician who has investigated a number of electrical fires and has written a book on the subject. He was well-qualified to give his opinion that a malfunction in the electrical components of the heater caused the fire. The district court did not abuse its discretion in permitting Freeman and Dolence to testify.

Lazarowicz also possessed sufficient qualifications to testify about defects in the thermostat contacts and high limit control. While Lazarowicz may not have been a specialist in heaters per se, he was a metallurgical engineer and had inspected

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<sup>11</sup>Defense experts Michael Phy, Richard Moore, and Vincent Acampora testified that the thermostat contacts showed evidence of electrical arcing and material transfer. Dolence testified that he observed serrations on the surface of the contacts, something he had never seen before even though he had inspected thousands of contacts. Marley's own witness, Richard Moore, likewise testified that he had seen over 1,000 contacts, none with serrations.

defective electrical contacts for years as part of his employment. These qualifications made him competent to testify about the post-fire condition of the thermostat contacts and high limit control, which were in essence electrical contacts. The district court did not abuse its discretion in permitting him to testify.

Moreover, even if the plaintiffs' experts lacked specific expertise in heaters, this matter went to the weight and not the admissibility of their testimony. See Arkwright Mut. Ins. Co. v. Gwinner Oil, Inc., 125 F.3d 1176, 1183 (8th Cir. 1997) ("[T]he factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility, and it is up to the opposing party to examine the factual basis for the opinion in cross-examination.") (quoting Hose v. Chicago Northwestern Transp. Co., 70 F.3d 968, 974 (8th Cir. 1995)); Sylla-Sawdon v. Uniroyal Goodrich Tire Co., 47 F.3d 277, 283 (8th Cir. 1995) ("Once the trial court has determined that a witness is competent to testify as an expert, challenges to the expert's skill or knowledge go to the weight to be accorded the expert testimony rather than to its admissibility.") (quoting Fox v. Dannenberg, 906 F.2d 1253, 1256 (8th Cir. 1990)); Williams v. Pro-Tec, Inc., 908 F.2d 345, 348 (8th Cir. 1990) (holding that an expert's self-acknowledged lack of medical expertise went to the weight rather than to the admissibility of his testimony).

The majority opinion views the testimony of the plaintiffs' experts as unreliable. Certainly expert testimony must be reliable. See Maj. Op. at 5, 6. Reliability in the context of this case and under Rule 702 relates to the qualifications of the experts, the foundation for their opinions, and their helpfulness to the jury. An expert's opinion should be excluded if it is fundamentally unsupported so that it can offer no assistance to the jury. See Arkwright, 125 F.3d at 1183. The plaintiffs' experts based their opinions on personal inspection of the evidence and applying knowledge acquired from training and experience. Their opinions rested on factual support. The district court did not abuse its discretion in determining that their opinions were reliable and could be considered by the jury.

Lazarowicz personally inspected the thermostat contacts and the high limit control. He saw that the surface of the contacts was serrated and that the contacts did not properly connect. He concluded in light of his knowledge and experience that these features contributed to the fire by causing the contacts to weld at the time of the fire. He saw that the high limit control was located behind a deflector shield. He determined, again in light of relevant training and experience, that the high limit control had failed to shut down the heater because the deflector shield prevented it from detecting the heat build-up. When determining whether such evidence is sufficient to support the jury's verdict, the evidence must be viewed in the light most favorable to the plaintiffs, giving them the benefit of all inferences. See Stockmen's Livestock Market, Inc. v. Norwest Bank of Sioux City, 135 F.3d 1236, 1240-41 (8th Cir. 1998). Lazarowicz's observations of the contact features and the placement of the high limit control provided enough factual support for his opinions to justify submitting the issue of a product defect to the jury.

Freeman and Dolence personally inspected the evidence from the fire scene. Their opinions about the cause of the fire did not lack factual support. The condition of the sofa and the charring in the entryway supported Freeman's and Dolence's determination that the fire originated in the entryway. The charring in the entryway and the hole in the floor supported their determination that the fire originated near the heater. Freeman discovered a partially burned throw rug near the hole. Three frequent visitors to the Weisgram home testified that a throw rug in the entryway was frequently pushed up against the heater. These facts supported the determination that the throw rug was pushed up against the heater and caused heat to build up in the heater. Freeman and Dolence knew that the throw rug and the glue used on vinyl flooring had flashpoints within the range of temperatures produced by baseboard heaters. This knowledge supported their determination that the heat build-up ignited the throw rug and the glue. Dolence knew the heater could not overheat if the thermostat and the high limit control functioned properly. This justified his

determination that those parts failed to shut down the heater at the time of the fire.

The plaintiffs' theory of causation depended primarily on circumstantial evidence. However, as discussed earlier, theories of fire causation must rely heavily on circumstantial evidence. There was enough evidence here for a reasonable jury to conclude that the fire originated as Freeman and Dolence testified. The fire investigators saw no other source of heat in the entryway other than the heater and no combustibles were found other than the throw rug and the glue.<sup>12</sup> The district court did not err in submitting the issue of causation to the jury.

The majority errs in a second regard. See Maj. Op. at 4 n.2. If the district court erred in admitting the testimony of the plaintiffs' experts, the relief to be awarded is a new trial, not judgment as a matter of law. In Midcontinent Broadcasting Co. v. North Central Airlines, Inc., 471 F.2d 357 (8th Cir. 1973), this court held that a new trial is the proper remedy for an error in the admission of expert testimony. See id. at 360. See also Schudel v. General Elec. Co., 120 F.3d 991, 995 (9th Cir. 1997); Jackson v. Pleasant Grove Health Care Ctr., 980 F.2d 692, 695-96 (11th Cir. 1993); Douglass v. Eaton Corp., 956 F.2d 1339, 1343-44 (6th Cir. 1992). Neither Wright v. Willamette Industries, Inc., 91 F.3d 1105 (8th Cir. 1996) nor Peitzmeier v. Hennessy Industries, Inc., 97 F.3d 293 (8th Cir. 1996) has overruled Midcontinent Broadcasting. The new trial question was not before the court or discussed in either of those two cases.

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.

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<sup>12</sup>Freeman had the hole beneath the heater checked for accelerants. None were found.

A North Dakota jury evaluated the evidence and determined that the plaintiffs 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.

A true copy.

Attest:

CLERK, U.S. COURT OF APPEALS, EIGHTH CIRCUIT.