

IN THE COURT OF APPEALS  
STATE OF ARIZONA  
DIVISION ONE

WILLIAM LOHMEIER, and BARBARA LOHMEIER, )	1 CA-CV 05-0764
husband and wife, )	
	)
Plaintiffs-Appellants, )	DEPARTMENT E
	)
v. )	O P I N I O N
	)
	)
	Filed 12/12/06
JUANITA HAMMER and JOHN DOE HAMMER, )	
wife and husband, )	
	)
Defendants-Appellees. )	
	)

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Appeal from the Superior Court in Yavapai County

Cause No. CV 2003-0475

The Honorable Ralph Matthew Hess, Judge *Pro Tempore*

**AFFIRMED**

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W E I S B E R G, Judge

¶1 William and Barbara Lohmeier appeal from a jury verdict in favor of Juanita Hammer on their claims arising from a motor vehicle accident. For the reasons discussed below, we affirm.

## FACTS AND PROCEDURAL HISTORY

¶12 On July 5, 2001, Hammer rear-ended William while he was stopped at an intersection in Prescott, Arizona. On June 13, 2003, the Lohmeiers filed a complaint against Hammer in Yavapai County Superior Court, alleging that she negligently caused the collision that resulted in injuries to William's lumbar spine, cervical spine, and shoulder. In addition, William's wife, Barbara, sought damages for loss of consortium. William, who was sixty-eight years old at the time of the accident, presented evidence of his preexisting medical conditions, which he alleged caused him to be more susceptible to injury. In support of these claims, William presented testimony from his treating physicians.

¶13 Hammer admitted that she struck William's vehicle, but disputed the issues of causation and damages. At trial, Hammer presented the expert testimony of Dr. Joseph Peles, a biomechanical engineer, who opined that the forces involved in the collision were not sufficient to have caused William's alleged physical injuries. Hammer also presented evidence indicating William's "lack of candor," such as his failure to disclose certain medical treatments that he had received before the accident, as well as photographs taken after the accident that showed only minor damage to the vehicles.

¶14 The jury returned a verdict in favor of Hammer and awarded no damages to the Lohmeiers. The Lohmeiers moved for a new trial, arguing that the jury's verdict "was not justified by the

evidence presented in trial." See Ariz. R. Civ. P. 59(a). The trial court denied the motion, and the Lohmeiers filed a timely appeal. We have jurisdiction pursuant to Arizona Revised Statutes ("A.R.S.") sections 12-2101(B),(F)(1) and -2102 (2003).

#### **ISSUES**

¶15 On appeal, the Lohmeiers raise the following issues: 1) whether the trial court erred in admitting photographs of the vehicles and related testimony; 2) whether the trial court erred by using an improper jury form and refusing the Lohmeiers' request for special interrogatories; 3) whether the trial court abused its discretion by awarding Hammer substantially all of the expert witness fees; 4) whether the verdict was supported by substantial evidence; and 5) whether the trial court erred by allowing a biomechanical engineer to testify to the causation of William's physical injuries.

#### **STANDARD OF REVIEW**

¶16 We review a trial court's evidentiary rulings "for an abuse of discretion and generally affirm a trial court's admission or exclusion of evidence absent a clear abuse or legal error and resulting prejudice." *John C. Lincoln Hosp. and Health Corp. v. Maricopa County*, 208 Ariz. 532, 543, ¶ 33, 96 P.3d 530, 541 (App. 2004). In reviewing a jury verdict, we view the evidence in the light most favorable to sustaining the verdict. *Hutcherson v. City of Phoenix*, 192 Ariz. 51, 53, ¶ 13, 961 P.2d 449, 451 (1998). We

will affirm the judgment if any substantial evidence exists permitting reasonable persons to reach such a result. *Id.*

## DISCUSSION

### Vehicle Photographs

¶7 The Lohmeiers first argue that photographs of the vehicles were improperly admitted because they were taken on an unknown date and did not accurately depict the damage to the vehicles immediately following the collision.<sup>1</sup> On appeal, we will not disturb a trial court's rulings on the admission or exclusion of evidence unless we find a clear abuse of discretion and resulting prejudice, or find that the trial court misapplied the law. *Gemstar Ltd. v. Ernst & Young*, 185 Ariz. 493, 505, 917 P.2d 222, 234 (1996); *Rimondi v. Briggs*, 124 Ariz. 561, 563, 606 P.2d 412, 414 (1980) (trial court has considerable discretion in ruling on the admission of photographs). In determining whether a trial court abused its discretion, "we must determine not whether we might have so acted under the circumstances, but whether the lower court exceeded the bounds of reason by performing the challenged act." *Toy v. Katz*, 192 Ariz. 73, 83, 961 P.2d 1021, 1031 (App. 1997). Thus, we will not "disturb the exercise of discretion of the trial court if it is supported by any reasonable evidence."

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<sup>1</sup>The Lohmeiers waived the issue of the alleged improper admission of vehicle damage estimates because they failed to argue it in their briefs. See *Carrillo v. State*, 169 Ariz. 126, 132, 817 P.2d 493, 499 (App. 1991) ("Issues not clearly raised and argued on appeal are waived.").

*Peters v. M & O Constr., Inc.*, 119 Ariz. 34, 36, 579 P.2d 72, 74 (App. 1978).

¶18 To be admissible, a photograph must be a reasonably faithful representation of the object depicted and aid the jury in understanding the testimony or evaluating the issues. *Baker v. Atchison, Topeka and Santa Fe Ry. Co.*, 11 Ariz. App. 387, 389, 464 P.2d 974, 976 (1970). However, the individual who took the photographs need not be the person who verifies them at trial, and the verifying witness is not required to have been present when the photographs were taken, provided that he or she can attest that the photographs accurately portray the scene or object depicted. *Higgins v. Ariz. Sav. & Loan Ass'n*, 90 Ariz. 55, 66, 365 P.2d 476, 484 (1961).

¶19 In this case, Hammer proffered two photographs of William's vehicle that were purportedly taken by an auto body shop on or about July 27, 2001. Hammer testified that the photographs accurately depicted the condition of the vehicle immediately after the accident. The Lohmeiers, however, disputed the accuracy of the photographs, relying on William's testimony that the photographs of his vehicle appeared to have been taken after it was repaired. The trial court admitted the photographs, finding that Hammer's testimony had adequately established the requisite foundation.

¶10 The Lohmeiers contend that the trial court should have excluded the photographs because they were inaccurate. While we recognize that a trial court may exclude photographs when there is

some evidence that they are inaccurate, see, e.g., *Henderson v. Breesman*, 77 Ariz. 256, 262, 269 P.2d 1059, 1064 (1954), the failure to do so does not necessarily constitute an abuse of discretion. See *Stroud v. Dorr-Oliver, Inc.*, 112 Ariz. 403, 410, 542 P.2d 1102, 1109 (1975).

¶11 The Lohmeiers suggest that the trial court should not have credited Hammer's testimony because the eye condition she developed prior to trial required her to use a magnifier to view the photographs before providing the foundational testimony. Yet Hammer testified unequivocally that the photographs were consistent with her observations at the scene of the accident. Moreover, the Lohmeiers were free to challenge the accuracy of her testimony on cross-examination, and the trial court specifically advised the jury of the Lohmeiers' challenge prior to deliberation. Accordingly, the trial court did not abuse its discretion in admitting the photographs into evidence.

#### **Verdict Forms and Interrogatories**

¶12 The Lohmeiers next argue that the trial court erred in refusing to give the jury their requested verdict form, which segregated each alleged physical injury (lumbar spine, cervical spine, and shoulder), and in refusing, in the alternative, to submit special interrogatories to the jury regarding each injury. In addition, the Lohmeiers contend that the trial court erroneously refused their request that the jury be given a separate verdict form for Barbara's claim for loss of consortium. The trial court

ruled that the Lohmeiers' proposed verdict forms and special interrogatories would be confusing and unhelpful to the jury as well as prejudicial to Hammer.

¶13 We evaluate jury instructions and verdict forms as a whole to determine whether they correctly stated the law, allowed the jury to understand the issues, and provided the jury with the correct rules for reaching a decision. *Lay v. City of Mesa*, 168 Ariz. 552, 556, 815 P.2d 921, 925 (App. 1991). Failure to give a requested verdict form is not reversible error unless the omission was prejudicial to the moving party. *State v. Garcia*, 102 Ariz. 468, 471, 433 P.2d 18, 21 (1967). Similarly, submission of special interrogatories is discretionary with the trial court. *Patania v. Silverstone*, 3 Ariz. App. 424, 428, 415 P.2d 139 (1966) (citing *Powell v. Langford*, 58 Ariz. 281, 287, 119 P.2d 230, 232 (1941)).

¶14 A general verdict implies a finding by the jury on every essential fact in favor of the prevailing party. *King & Johnson Rental Equip. Co. v. Superior Court*, 123 Ariz. 256, 257, 599 P.2d 212, 213 (1979). Thus, the jury's verdict in this case reflects its determination that the Lohmeiers failed to show by a preponderance of the evidence that the collision caused any of William's alleged physical injuries.

¶15 Moreover, the trial court did not abuse its discretion in finding that that the Lohmeiers' proposed verdict forms and special interrogatories would have placed undue emphasis on returning a verdict in their favor by singling out particular factual aspects

of the litigation and making it likely that the jury would attach undue significance to such facts. See *Bell v. Maricopa Med. Ctr.*, 157 Ariz. 192, 196, 755 P.2d 1180, 1184 (App. 1988) (trial court did not err in refusing to give separate instruction regarding one aspect of the applicable standard of care).

¶16 The Lohmeiers also allege that the trial court committed prejudicial error by refusing their request that the jury be given a separate verdict form for Barbara's loss of consortium claim. The trial court gave a general verdict form referencing both William and Barbara. Because Barbara's claim was a separate claim belonging to her, *Bain v. Superior Court*, 148 Ariz. 331, 335-36, 714 P.2d 824, 828-29 (1986), the trial court should have provided a separate verdict form on it. However, as the loss of consortium claim was dependent upon finding that Hammer had caused William's physical injuries, the jury could not have awarded damages for Barbara's claim given its verdict on William's injuries. See *Barnes v. Outlaw*, 192 Ariz. 283, 285-86, ¶ 8, 964 P.2d 484, 486-87 (1998) (derivative claim for loss of consortium necessarily requires proof of each of the elements of the underlying cause of action). As a result, no prejudice resulted from the trial court's incorrect use of a single verdict form for all of the claims. *Garcia*, 102 Ariz. at 471, 433 P.2d at 21.

#### **Expert Fees**

¶17 Before trial, Hammer made an offer of judgment to the Lohmeiers, which they refused. Because Hammer prevailed at trial,

achieving a more favorable outcome than her offer, she was entitled to an award of the reasonable expert witness fees that she subsequently incurred. See Ariz. R. Civ. P. 68(d). Over the Lohmeiers' objections, the trial court awarded Hammer \$16,274.59 of the \$18,627.30 that she incurred for Dr. Peles' expert testimony. See A.R.S. § 12-332(A)(1) (2003).

¶18 The Lohmeiers argue that the trial court erred in its assessment of Dr. Peles' expert witness fees because his fees were unreasonable and not supported in sufficient detail. In general, a trial court is given wide latitude in assessing an award of expert witness fees under A.R.S. § 12-332, and we will not disturb its award absent an abuse of discretion. See, e.g., *Fowler v. Great Am. Ins. Co.*, 124 Ariz. 111, 114, 602 P.2d 492, 495 (App. 1979); *Cyprus Bagdad Copper Corp. v. Ariz. Dep't of Revenue*, 196 Ariz. 5, 9, ¶ 17, 992 P.2d 5, 9 (App. 1999).

¶19 Here, the trial court's award was based on its finding that Hammer had

presented documentation of sufficient detail, complemented by testimony at trial, of the work performed by Dr. Peles. Dr. Peles' fees increased incident to the preparation of a supplemental report necessitated by additional injury claims of [the Lohmeiers'] subsequent to Dr. Peles' initial report.

¶20 Our review of the record reflects that there was ample evidence to support the trial court's award under A.R.S. § 12-332. As discussed in more detail below, Dr. Peles' testimony was hotly disputed by the Lohmeiers, who filed an extensive motion in limine

to preclude him from testifying and proffered their own expert witness to critique Dr. Peles' calculations and conclusions. Thus, the trial court did not abuse its discretion in finding that a significant proportion of Dr. Peles' fees were incurred as a result of the Lohmeiers' own trial strategy. Moreover, the record reflects that Dr. Peles provided billing statements that adequately detailed the general type of work he performed, his hourly rate, and related expenses. See *Cyprus Bagdad Copper Corp.*, 196 Ariz. at 10, ¶ 21, 992 P.2d at 10 (requirements set forth in *Schweiger v. China Doll Rest., Inc.*, 138 Ariz. 183, 187-89, 673 P.2d 927, 931-33 (App. 1983), inapplicable to expert witness fee awards). Nor did the trial court err in refusing to use the fees charged by the Lohmeiers' expert witness as the benchmark for assessing Dr. Peles' fees, given the different skills, training, and experience of the two experts, as well as the different amounts of time they spent on the case. Accordingly, the trial court did not abuse its discretion in awarding Hammer a substantial portion of Dr. Peles' expert witness fees or in denying the Lohmeiers' request for an evidentiary hearing on the issue. See, e.g., *Brake Masters Sys., Inc. v. Gabbay*, 206 Ariz. 360, 365, ¶ 14, 78 P.3d 1081, 1086 (App. 2003); compare *Ohliger v. Carondelet St. Mary's Hosp. & Health Ctr.*, 173 Ariz. 597, 598, 845 P.2d 523, 524 (App. 1992) (significant factual dispute with respect to award of attorney's fees).

### Dr. Peles' Expert Testimony

¶21 The Lohmeiers argued below that, although Hammer's vehicle struck William's vehicle at a relatively low rate of speed, he was injured because, at least in part, he was more susceptible to injury due to his pre-existing medical conditions, including an arthritic condition that made his spine very fragile, degenerative disk disease, a prior cervical fusion surgery, and two rotator cuff surgeries. In response, Hammer presented the testimony of Dr. Peles on the issue of whether the accident was the "cause in fact" of William's medical injuries; that is, whether the accident "helped cause the final result and if that result would not have happened" otherwise. *Ontiveros v. Borak*, 136 Ariz. 500, 505, 667 P.2d 200, 205 (1983). In preparation for trial, Dr. Peles conducted a reconstruction of the accident and a biomechanical analysis of the forces involved, concluding that the accident could not have been the cause of William's alleged injuries. See, e.g., *Crackel v. Allstate Ins. Co.*, 208 Ariz. 252, 256, ¶ 5, 92 P.3d 882, 886 (App. 2004).

¶22 Prior to trial, the Lohmeiers filed a motion *in limine* to preclude Dr. Peles' testimony, arguing that his testimony "must be excluded" under *Frye v. U.S.*, 293 F. 1013 (D.C. Cir. 1923), and the Arizona Rules of Evidence because, among other things, Dr. Peles' calculations were "highly flawed and unreliable" and because he had "no medical training and is not qualified to testify on medical issues and injuries." The crux of the Lohmeiers' motion was their

claim that it is inherently unreliable to draw causal inferences of physical injury from any biomechanical analysis, as their expert, Dr. Alan Immerman, explained in his report.<sup>2</sup> In response, Hammer argued that under *Logerquist v. McVey*, 196 Ariz. 470, 490, ¶ 62, 1 P.3d 113, 133 (2000), Dr. Peles' testimony was not subject to a *Frye* hearing because biomechanics was not a "novel science" and because Dr. Peles' opinion was based on "deterministic laws and principles of physics, mechanics, biomechanics and engineering, along with [Dr. Peles' own] study/experience/research in areas of anatomy, physiology and spinal injury mechanisms." The trial court denied the Lohmeiers' motion without comment.<sup>3</sup>

¶23 After the jury rendered its verdict in favor of Hammer, the Lohmeiers filed a motion for a new trial in which they argued that the jury verdict "finding no causation was not justified by the evidence presented in trial." See Ariz. R. Civ. P. 59(a)(8). The trial court denied that motion as well, explaining that "[i]n evaluating testimony of the witnesses, expert and lay, the jury determines which testimony to accept or reject and what weight to apply to it." See *Logerquist*, 196 Ariz. at 488, ¶ 52, 1 P.3d at 131.

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<sup>2</sup>Although the Lohmeiers also claimed that Dr. Peles' calculations "severely underestimated" the forces involved in the accident, they failed to develop this argument on appeal. See *Carrillo*, 169 Ariz. at 132, 817 P.2d at 499.

<sup>3</sup>The trial court did, however, preclude Dr. Peles "from opining whether Plaintiffs' expert, Dr. Immerman, qualifies as an expert or is truthful."

¶124 On appeal, the Lohmeiers argue that the trial court erred in admitting Dr. Peles' testimony because 1) he was not qualified to testify on medical causation; and 2) his testimony was admitted without being subjected to the analysis set forth in *Frye*, 293 F. at 1014. The Lohmeiers assert that the probative value of Dr. Peles' testimony was "substantially outweighed by the danger of unfair prejudice," confused the issues, and misled the jury such that it should have been excluded under Arizona Rule of Evidence 403.

¶125 The admission of expert testimony is governed by Arizona Rule of Evidence 702, which provides the following:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise.[<sup>4</sup>]

The trial court has broad discretion to determine whether a witness is competent to testify as an expert, and we will not overturn such a determination absent a clear abuse of discretion and resulting prejudice. *Gemstar*, 185 Ariz. at 505, 917 P.2d at 234. We conclude that the trial court's admission of Dr. Peles' expert testimony was required by *Logerquist*.

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<sup>4</sup>Expert testimony that is otherwise admissible is not objectionable because it encompasses an ultimate issue to be decided by the jury. Ariz. R. Evid. 704.

### Dr. Peles' Qualifications

¶26 The Lohmeiers first argue that the trial court erred in admitting Dr. Peles' testimony because he was not a medical doctor, had no medical training to diagnose injuries, and did not personally examine William.<sup>5</sup>

¶27 To determine whether a witness qualifies as an expert, a trial court must decide whether the proffered expert's testimony will assist the jury on a particular topic. *Bliss v. Treece*, 134 Ariz. 516, 518-19, 658 P.2d 169, 171-72 (1983). Such a determination is relative, "depending on the particular subject and the particular witness with reference to that subject, and is not fixed or limited to any class of persons acting professionally[.]" *Id.* at 519, 658 P.2d at 172 (quoting 7 Wigmore, *Evidence* § 1923 at 29 (Chadbourn rev. 1978)).

¶28 Thus, under Arizona law, it is not necessary that an expert witness be a medical doctor in order to offer testimony regarding the causation of physical injuries so long as the trial court has properly determined that the expert has specialized knowledge that will assist the jury in its resolution of that issue. *See, e.g., Baroldy v. Ortho Pharm. Corp.*, 157 Ariz. 574, 587-88, 760 P.2d 574, 587-88 (App. 1988) (microbiologist qualified to testify to diagnosis and causation of medical condition under

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<sup>5</sup>We do not address the issue of whether the trial court admitted Dr. Peles' testimony in violation of Arizona Rule of Civil Procedure 26(b)(4)(D) as the Lohmeiers have failed to develop the

Ariz. R. Evid. 702). As the Arizona Supreme Court has noted, an expert's "degree of qualification goes to the weight given the testimony, not its admissibility." *State v. Davolt*, 207 Ariz. 191, 210, ¶ 70, 84 P.3d 456, 475 (2004).

¶129 In this case, the trial court did not err in admitting Dr. Peles' testimony even though he did not possess a medical degree. Dr. Peles was retained to testify about his reconstruction of the accident, his calculations of the forces involved in it, and his opinion on the capability of such forces to cause injury to the human body. Dr. Peles' professional qualifications included a bachelor's degree in biomedical and electrical engineering from Vanderbilt University, a master's degree in bioengineering from Arizona State University, and a Ph.D. from Arizona State University in bioengineering with a specialty in injury biomechanics. Also, Dr. Peles had extensive personal experience in conducting accident reconstruction analyses. For example, as a Ph.D. student, Dr. Peles performed research on "how spinal injuries are produced and how the spine is unstable after injury," conducted "mechanical testing on cadaver spines to study how different loading conditions result in injury," and developed "computer models of the human spine to study injury production and instability." Dr. Peles' expertise in accident reconstruction and biomechanical analysis was also based on the research he performed at his company,

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argument on appeal. See, *Carrillo*, 169 Ariz. at 132, 817 P.2d at 499.

Biomechanics Research. Such qualifications supported a finding that Dr. Peles had significantly more knowledge and experience in biomechanical science and the effects of vehicle collisions on the human body than an ordinary juror. Moreover, the Lohmeiers had the opportunity to cross-examine Dr. Peles about his lack of a medical degree, and the trial court admitted the testimony of their expert, a licensed chiropractor, who critiqued the methodology and conclusions of many of the studies upon which Dr. Peles' analysis relied. Accordingly, unless *Frye* required an examination of the field of biomechanics, which was the underpinning of Dr. Peles' testimony, the trial court did not err in admitting such expert testimony despite Dr. Peles' lack of a medical degree and failure to personally examine William.

#### **The Applicability of *Frye***

¶130 The Lohmeiers further argue that the trial court erred in failing to subject Dr. Peles' testimony to a *Frye* hearing, given that it "involve[d] novel scientific principles and techniques." *Frye*, 293 F. at 1013. Hammer, relying on *Logerquist*, responds that "Arizona has rejected the *Frye* test for the type and nature of the testimony offered by Dr. Peles from his own analyses, research and experience." See *Logerquist*, 196 Ariz. at 490, ¶ 62, 1 P.3d at 133. We conclude that, pursuant to *Logerquist*, the trial court did not err in refusing to subject Dr. Peles' testimony to a *Frye* examination. To explain our conclusion, a brief review of the case

law regarding the admissibility of scientific expert testimony is necessary.

***Frye***

¶31 In *Frye*, the United States Court of Appeals for the District of Columbia Circuit ruled on the admissibility of expert testimony on a "deception test" based on blood pressure, an early form of the lie detector. 293 F. at 1013. The court explained that, in general,

[w]hen the question involved does not lie within the range of common experience or common knowledge, but requires special experience or special knowledge . . . the opinions of witnesses skilled in that particular science, art, or trade to which the question relates are admissible in evidence.

*Id.* at 1014 (citing defendant's brief with approval). The court noted, however, that

[j]ust when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

*Id.* The pre-trial inquiry into the general acceptance of a scientific principle or discovery underlying an expert witness's proffered testimony became known as the *Frye* test, which, until 1993, was "the dominant standard for determining the admissibility

of novel scientific evidence at trial." *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 585 (1993). Arizona was among the many states that adopted *Frye*. See *Logerquist*, 196 Ariz. at 489, ¶ 57, 1 P.3d at 132; *State v. Valdez*, 91 Ariz. 274, 277-80, 371 P.2d 894, 896-98 (1962).

### **The *Daubert* Trilogy**

¶132 In *Daubert*, the United States Supreme Court, interpreting the language of Federal Rule of Evidence 702, set forth a different inquiry that was necessary to determine the admissibility of scientific expert testimony.<sup>6</sup> 509 U.S. at 592-95. According to the Court, a trial judge must serve as a "gatekeeper" such that, when

[f]aced with a proffer of expert scientific testimony . . . the trial judge must determine at the outset, pursuant to Rule [of Evidence] 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the

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<sup>6</sup>Following *Daubert*, Federal Rule of Evidence 702 was amended as of December 2000 to read as follows:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, *if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.*

(Emphasis added.)

reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. We are confident that federal judges possess the capacity to undertake this review.

*Id.* at 592-93 (footnotes omitted). The Court outlined four factors that a court should consider in making this determination: 1) whether the theory or technique can be (or has been) tested; 2) whether it has been subjected to peer review and publication; 3) the "known or potential rate of error" of the technique; and 4) the general acceptance of the theory or technique. *Id.* at 593-94. The Court emphasized that the inquiry into the scientific validity of a theory or technique underlying an expert's proffered testimony is "a flexible one" and that

[i]ts overarching subject is the scientific validity and thus the evidentiary relevance and reliability of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.

*Id.* at 594-95. Twenty-seven states have explicitly adopted *Daubert*, and several other states have viewed the *Daubert* factors as "instructive." See David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 *Jurimetrics J.* 351, 356 (2004).

¶133 The scope of *Daubert* was clarified in *General Electric Co. v. Joiner*, 522 U.S. 136 (1997), and *Kumho Tire Co., Ltd. v.*

*Carmichael*, 526 U.S. 137 (1999).<sup>7</sup> In *Joiner*, the Supreme Court held that *Daubert* did not apply only to the "principles and methodology" of the expert, but also to any conclusions the expert reached. 522 U.S. at 146. Because "conclusions and methodology are not entirely distinct from one another" and "[t]rained experts commonly extrapolate from existing data," a trial court "may conclude that there is simply too great an analytical gap between the data and the opinion proffered." *Id.*

¶34 Similarly, in *Kumho Tire*, the Supreme Court rejected a lower court's holding that "a *Daubert* analysis applies only where an expert relies on the application of scientific principles, rather than on skill- or experience-based observation." 526 U.S. at 146 (citations omitted). The Court concluded that a distinction between "scientific knowledge" and "technical or other specialized knowledge," such as knowledge gained from professional experience, was not supported by the language of Rule 702 or the rationale of *Daubert*. *Id.* at 147-48; see *Daubert*, 509 U.S. at 592. The Court instructively noted that it

would prove difficult, if not impossible, for judges to administer evidentiary rules under which a gatekeeping obligation depended upon a distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. There is no clear line that divides the one from the others. Disciplines such as engineering rest upon scientific knowledge. Pure scientific theory itself may depend for

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<sup>7</sup>*Daubert*, *Joiner* and *Kumho Tire* are often referred to together as the "*Daubert* trilogy." See, e.g., *Logerquist*, 196 Ariz. at 496, ¶ 92, 1 P.3d at 139 (Martone, J., dissenting).

its development upon observation and properly engineered machinery. And conceptual efforts to distinguish the two are unlikely to produce clear legal lines capable of application in particular cases.

*Kumho Tire*, 526 U.S. at 148. The Court therefore held that "Daubert's general principles apply" to all matters described in Rule 702, including expert testimony based on skill or experience. *Id.* at 149.

### ***Logerquist***

¶135 *Logerquist v. McVey* was the Arizona Supreme Court's response to *Daubert*, *Joiner*, and *Kumho Tire*. *Logerquist* involved a plaintiff's allegations that her pediatrician had sexually abused her as a child. 196 Ariz. at 472, ¶ 3, 1 P.3d at 115. The plaintiff claimed that she had amnesia about the abuse for nearly twenty years until "her memory was triggered by watching a television commercial featuring a pediatrician." *Id.* The plaintiff sought "to introduce evidence, through expert testimony, that severe childhood trauma, including sexual abuse, can cause a repression of memory, and that in later years this memory can be recalled with accuracy." *Id.* (citing trial court minute entry). The plaintiff's expert, a clinical psychiatrist who specialized in treating dissociative amnesia, opined "that his experience and observations over many years, together with the extensive literature on the subject, [had] led him to conclude the phenomenon exists in some patients." *Id.* at ¶ 4. After a lengthy *Frye* hearing, the trial court determined that the "theories advanced by

Plaintiff's experts are not generally accepted in the relevant scientific community of trauma memory researchers." *Id.* at ¶ 5 (citing trial court order). On special action, the Arizona Supreme Court found *Frye* to be inapplicable and, rejecting *Daubert*, vacated the trial court's order excluding the expert testimony.<sup>8</sup> *Id.* at 491, ¶ 65, 1 P.3d at 134.

¶36 The *Logerquist* majority noted that the plaintiff's expert was "one of the leading researchers and authorities in behavioral science" and that "[i]t would be strange that a witness so well qualified and experienced would not be permitted to testify on an issue beyond the experience of the average juror." *Id.* at 475, ¶ 17, 1 P.3d at 118. The majority interpreted Arizona Rules of Evidence 702 and 703, which at the time were identical to the analogous federal rules interpreted by the United States Supreme Court in the *Daubert* trilogy, to allow experts to "testify concerning their own experimentation and observation and opinions based on their own work without first showing general acceptance." *Id.* at 480, ¶ 30, 1 P.3d at 123 (quoting *State v. Hummert*, 188 Ariz. 119, 127, 933 P.2d 1187, 1195 (1997)). Accordingly, the court held that *Frye* is

applicable when an expert witness reaches a conclusion by deduction from the application of novel scientific principles, formulae, or

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<sup>8</sup>Justice Jones filed a specially concurring opinion stating that he was "skeptical of *Daubert* and *Kumho Tire*, at least until a solid measure of acceptable consistency emerges under their application." *Logerquist*, 196 Ariz. at 491-93, ¶¶ 66-74, 1 P.3d at 134-36.

procedures developed by others. It is inapplicable when a witness reaches a conclusion by inductive reasoning based on his or her own experience, observation, or research. In the latter case, the validity of the premise is tested by interrogation of the witness; in the former case, it is tested by inquiring into general acceptance.

*Id.* at 490, ¶ 62, 1 P.3d at 133.

¶37 The majority advanced several reasons for rejecting *Daubert* and for endorsing a limited application of *Frye*. For example, the majority expressed its concern that *Daubert*-based hearings would encourage a "proliferation of paper" and would force judges to spend too much time investigating highly technical evidence. *Id.* at 486-87, ¶50, 1 P.3d at 129-30. However, perhaps the primary reason behind the majority's holding was its belief that rigid admissibility hearings would allow judges to improperly "encroach on the province and independence of the jury under the guise of acting as gatekeepers." *Id.* at 490, ¶ 59, 1 P.3d at 133.

The majority explained that, in its view,

the evidentiary testing should come from the adversary system and be decided by the jury. . . . [H]aving faith in the jury system, we believe jurors can handle the problem. Whether or not the jury finds Plaintiff's claims well founded, we are willing to indulge the presumption that the jurors will probably be right, or at least as right as the trial judge, and we, might be on this and the many other difficult issues of fact that come before our courts.

*Id.* at 491, ¶ 64, 1 P.3d at 134.<sup>9</sup>

¶138 *Logerquist* has been cited with approval in several states. See, e.g., *Marron v. Stromstad*, 123 P.3d 992, 1006 (Alaska 2005) ("non-scientific" testimony of accident reconstructionist and neurologist not subject to judicial gatekeeping); *Howerton v. Arai Helmet, Ltd.*, 597 S.E.2d 674, 692 (N.C. 2004) (rejecting *Daubert*); *Commonwealth of Penn. v. Dengler*, 843 A.2d 1241, 1244 (Pa. Super. Ct. 2004) (psychological or psychiatric testimony is not novel scientific evidence subject to *Frye*); *State ex rel. Wiseman v. Henning*, 569 S.E.2d 204, 210 (W. Va. 2002) (admitting cancer specialist's testimony regarding medical causation); *Kuhn v. Sandoz Pharm. Corp.*, 14 P.3d 1170, 1180-81 (Kan. 2000) (expert testimony on causation not subject to *Frye* test).

¶139 Disagreeing with the *Logerquist* majority, in her dissent, Justice McGregor criticized the majority's decision for several reasons. First, Justice McGregor noted that, after *Logerquist*, significant evidentiary rulings will differ depending upon whether

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<sup>9</sup>The concern that the application of the *Daubert* trilogy might result in the increased exclusion of proffered scientific expert testimony may have been overstated. As explained in the Advisory Committee Notes to the 2000 amendment of Federal Rule of Evidence 702,

[a] review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule. *Daubert* did not work a "seachange over federal evidence law," and "the trial court's role as gatekeeper is not intended to serve as a replacement for the adversary system."

Fed. R. Evid. 702 (Advisory Comm. Notes 2000) (citing *U.S. v. 14.38 Acres of Land Situated in Leflore County, Miss.*, 80 F.3d 1074, 1078

the lawsuit proceeds in state versus federal court, even though the language of Arizona Rule of Evidence 702 was then identical to the federal version of the rule. 196 Ariz. at 498, ¶ 100, 1 P.3d at 141. In addition to the forum-seeking inherent in such a situation, Justice McGregor was concerned that "Arizona's courts will lose the advantage of being able to learn from and follow the reasoning of other courts as they develop and apply [Federal Rule of Evidence] 702." *Id.* Justice McGregor also was concerned that "by rejecting *Daubert*, [Arizona courts] lose the flexibility needed to admit evidence based upon reliable, but newly-developed, scientific principles" because such principles will take time to obtain "general acceptance" in the scientific community. *Id.* at ¶ 101. Justice McGregor next commented that the majority's distinction between "scientific" evidence, which is subject to *Frye*, and "non-scientific" evidence, which would not be subject to *Frye*, did not rest on a "firm basis." *Id.* at ¶ 102. Finally, Justice McGregor observed that allowing a jury to hear unreliable, invalid "expert" evidence would not benefit "either our judicial system or the litigants" because the probative value of such evidence "is connected inextricably to its reliability." *Id.* at 499, ¶ 103, 1 P.3d at 142 (citation omitted). Thus, Justice McGregor concluded that "permitting a jury to hear a credible witness testify about unreliable, invalid 'science'" would not assist a jury. *Id.* at ¶ 104.

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(5th Cir. 1996)).

¶40 In his separate dissent, Justice Martone concluded that the proffered expert testimony in *Logerquist* would be inadmissible if it were subject to *Frye*. *Id.* at 493, ¶ 77, 1 P.3d at 136. He lamented that the majority had improperly removed reliability as a test for the admission of expert testimony when it was based upon "experience and observation about human behavior for the purpose of explaining that behavior." *Id.* at 494, ¶ 80, 1 P.3d at 137. Justice Martone pointed out the such evidence was, and ought to be, based on reliable science and subject to some form of judicial scrutiny, whether it be under *Frye* or *Daubert*. *Id.* at 493-94, ¶ 80, 1 P.3d at 136-37.

**Dr. Peles' Testimony Admissible Under *Logerquist***

¶41 In the reports he prepared for trial, Dr. Peles explained that his reconstruction and biomechanical analysis of the accident was based on the mechanical specifications of the vehicles, the accident reports, the photographs and the repair estimates of the damage to the vehicles, William's medical records, and the depositions of William's treating physicians. Dr. Peles described the methods he used to reconstruct the collision and calculate the resulting forces. According to Dr. Peles' analysis, the impact speed of the collision was less than 6.8 miles per hour, causing William's vehicle to experience a change in velocity of less than 4.5 miles per hour. Such a change in velocity, according to Dr. Peles, was not sufficient to cause William's lumbar or shoulder

injuries,<sup>10</sup> even in light of his preexisting medical conditions. In response, the Lohmeiers proffered the testimony of Dr. Immerman, a licensed chiropractic physician, who criticized the small sample groups of the studies cited by Dr. Peles as well as the absence of any biomechanical studies involving subjects with preexisting conditions similar to William's.

¶42 Dr. Peles' testimony was based on a combination of deductive reasoning from generally accepted scientific principles and inductive reasoning from his own research and calculations. Dr. Peles' reconstruction of the accident, for example, was based primarily on "applied deterministic laws and principles" of physics, which, he noted, were "inherently valid." On the other hand, Dr. Peles also noted the extensive research he conducted as a graduate student and at his company, where "actual crash tests" were performed using "computers and sensors" to "study the damage and the speeds of vehicles." Clearly, his extrapolations from his accident reconstruction and his conclusion that the forces involved could not cause significant physical injury were based, at least in part, on his personal research, observation, and experience.

¶43 The trial court denied the Lohmeiers' request for a *Frye* hearing without explanation, citing only Arizona Rule of Evidence 702 and two cases in which the Arizona Supreme Court analyzed the

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<sup>10</sup>Dr. Peles did not offer an opinion regarding whether the collision produced a mechanism for the alleged injury to William's cervical spine.

qualifications of proffered experts, *Davolt*, 207 Ariz. at 210-11, ¶¶ 69-83, 84 P.3d at 475-76, and *State v. Mosley*, 119 Ariz. 393, 399-400, 581 P.2d 238, 244-45 (1978). Accordingly, the trial court might have denied the Lohmeiers' request for a *Frye* hearing either because it found that the scientific theories Dr. Peles relied upon were not novel, or because it found that his testimony stemmed from "inductive reasoning" based on his own "experience, observation, or research." See *Logerquist*, 196 Ariz. at 490, ¶ 62, 1 P.3d at 133.

¶44 Yet in light of Dr. Immerman's testimony critiquing the methodology of drawing inferences about the causation of physical injuries from a biomechanical analysis, the trial court would have erred if it determined, *sua sponte*, that Dr. Peles' testimony was premised on "generally accepted" scientific principles and theories and therefore not subject to *Frye*. See, e.g., *State v. Garcia*, 197 Ariz. 79, 82, ¶ 19, 3 P.3d 999, 1002 (App. 1999) (explaining that "significant disputes between qualified experts will preclude a finding of "'general acceptance'") (citation omitted). Several cases illustrate the error of such a determination.

¶45 *O'Neill v. Windshire-Copeland Associates*, for example, involved a negligence action brought by a plaintiff who sustained serious injuries after falling from a second-story balcony. 372 F.3d 281, 282 (4th Cir. 2004). The lower court had excluded the testimony of a professor of biomechanics who prepared a report that "measured the amount of force various wind-gust levels would place on [the plaintiff's] upper torso," described where the plaintiff's

"center of gravity was in relation to the thirty-two-inch railing" on the balcony, and concluded that it was unlikely

that someone [with the plaintiff's] athletic skill and ability would have accidentally leaned over too far backwards and lost her balance and fallen. Rather, it seems much more likely that an unexpected gust of wind triggered her fall to the ground below causing her tragic injury.

*Id.* at 284. The Fourth Circuit Court of Appeals affirmed, finding that the lower court did not abuse its discretion in determining that the expert's testimony was "based more on supposition than science." *Id.* at 285. However, the court noted that

[n]ot everything in [the expert's] report was inadmissible. . . . [H]e could have testified about where [the plaintiff's] center of gravity was in relation to the thirty-two-inch railing. [He] could also have testified as to the amount of force that specific wind velocities would exert on a human torso. That would have been expert testimony based on "scientific, technical, or other specialized knowledge."

*Id.* at 285 n.2 (citing Fed. R. Evid. 702).

¶146 Similarly, *Suarez v. Egeland* involved a defendant who, as in the instant case, proffered the testimony of a biomechanical expert to show that the forces involved in a motor vehicle accident could not have caused the plaintiff's alleged injuries. 801 A.2d 1186, 1188 (N.J. Super. Ct. App. Div. 2002). The Appellate Division of the Superior Court of New Jersey noted that the lower court should have conducted a preliminary hearing into the expert's proffered testimony because it "would have afforded the parties and the court an opportunity to explore fully the purported scientific

bases of [the expert's] opinions outside the presence of the jury." *Id.* at 1189. The court further noted that the expert did not personally conduct or observe tests of low-impact collisions on humans, that he was "not a physician or medical researcher" and that he had "only basic training in anatomy, physiology and pathology." *Id.* The court concluded that the defendant had failed to establish that the expert's testimony derived from "reliable methodology supported by some expert consensus." *Id.* (citation omitted).

¶147 While expert testimony based on a biomechanical analysis has not always been excluded, it generally has been subjected to some form of judicial gatekeeping. In *Valentine v. Grossman*, for example, the Appellate Division of the Supreme Court of New York noted with approval that a *Frye* hearing was conducted into the testimony of the defendants' two biomechanical experts. 283 A.D.2d 571, 572-73 (N.Y. App. Div. 2001). The court found that the testimony of both experts was admissible and relevant to the defense. *Id.* at 573. Similarly, in *Phillips v. Raymond Corp.*, the United States District Court for the Northern District of Illinois subjected the proffered testimony of two biomechanical engineers to a *Daubert* analysis and found portions of their testimony admissible. 364 F. Supp. 2d 730, 741 (N.D. Ill. 2005).

¶148 In the present case, of course, we "assume that the trial court did no wrong, in the absence of a showing to the contrary." *Brewer v. Peterson*, 9 Ariz. App. 455, 458, 453 P.2d 966, 969

(1969). Here, although the trial court could have based its ruling on the erroneous determination that the inference of causation from Dr. Peles' biomechanical analysis was not novel, we must assume that the trial court denied the Lohmeiers' request for a *Frye* hearing because it determined Dr. Peles' testimony stemmed from "inductive reasoning based on his or her own experience, observation, or research" and as such was not subject to a *Frye* hearing under *Logerquist*. 196 Ariz. at 490, ¶ 62, 1 P.3d at 133. As explained above, there was reasonable evidence in the record to support such a determination, given Dr. Peles' extensive qualifications in biomechanics, the research he personally conducted, and the reports he prepared for trial. Accordingly, we affirm the trial court's admission of Dr. Peles' testimony on that basis. See *Peters*, 119 Ariz. at 36, 579 P.2d at 74.

#### **Should *Logerquist* be Reconsidered?**

¶49 While *Logerquist* requires that we affirm the trial court's ruling, see *State v. Sullivan*, 205 Ariz. 285, 288, ¶ 15, 69 P.3d 1006, 1009 (App. 2003) (court of appeals bound by decisions of supreme court), we note that the facts of this case call into question many of *Logerquist*'s widely asserted flaws. For example, Dr. Immerman testified at trial about recent scholarship indicating that "information regarding the biomechanics and injuring mechanisms for low back injuries is . . . scant." Dr. Immerman further noted that the studies Dr. Peles and other biomechanical engineers rely upon involved fewer than twenty participants, none

of whom suffered from any preexisting medical conditions similar to William's. Moreover, Dr. Immerman testified that Dr. Peles

stands alone, as far as I can tell, in the United States of America in claiming that you do not need to rely on human volunteer tests, that you can make a prediction about what's going to happen to somebody based on the laws of physics in engineering.

¶150 Although Dr. Peles' testimony, in whole or in part, may well have survived a hearing under *Frye* or *Daubert*, we deem it troubling that because of *Logerquist* such a review was not conducted. Indeed, several critics have faulted *Logerquist* for preventing trial courts from scrutinizing proffered scientific expert testimony and for leaving that unenviable and often Herculean task to "the commonsense judgment of a group of laymen." See *Williams v. Florida*, 399 U.S. 78, 100 (1970) (describing the essential features of a jury); see, e.g., Margaret A. Berger, *When is Clinical Psychology Like Astrology?*, 33 Ariz. St. L.J. 75, 83 (2001); D. H. Kaye, *Choice and Boundary Problems in Logerquist, Hummert, and Kumho Tire*, 33 Ariz. St. L. J. 41, 55-59 (2001); Paul C. Giannelli, *Scientific Evidence in Civil and Criminal Cases*, 33 Ariz. St. L. J. 103, 112-15 (2001).

¶151 The non-application of a *Frye* review to expert testimony based on the witness' own observations and experiences has been especially criticized. For example, Professor David L. Faigman explained that *Logerquist's* distinction constituted a fundamental misunderstanding of the scientific process which "involves a

constant ebb and flow between the collecting of facts and the describing of theory that will give order and meaning to those facts." *Embracing the Darkness: Logerquist v. McVey and the Doctrine of Ignorance of Science is an Excuse*, 33 Ariz. St. L.J. 87, 90-93 (2001). According to Faigman, [t]here is no division in knowledge acquisition between inductive and deductive reasoning. They are both integral parts of the scientific method." *Id.* at 93. Moreover, the history of science is replete with active charlatans who were all too eager to demonstrate their latest single-handed "discovery" to an attentive crowd. As the above criticism indicates, far from preventing the inefficiency that it viewed as inherent in judicial gatekeeping, *Logerquist* arguably exacerbated the problem by foisting the task upon juries.

¶152 Also, according to Professor Edward J. Imwinkelried, *Logerquist* "misconceived the trial judge's role under Rule of Evidence 104." *Logerquist v. McVey: The Majority's Flawed Procedural Assumptions*, 33 Ariz. St. L.J. 121, 124 (2001). Imwinkelried reasoned that the *Frye* and *Daubert* tests are an implementation of Rule 104(a), under which a trial court passes "on the credibility of the foundational testimony and makes a finding of fact as to whether the foundational fact is true." *Id.* at 130. According to Imwinkelried, *Daubert* was not premised on elitist presumptions about juries, but on the question of "whether there is a significant risk that the jurors' exposure to the foundational testimony and the proffered evidence will distort their

deliberations even when they make a conscious decision that the item of evidence is technically inadmissible." *Id.* at 132-33. Thus, even when jurors might conclude that a technique's error rate is unacceptable, "a danger remains [that] '[t]he jurors know that the technique works sometimes[.] . . . The jurors may be tempted to conclude that the expert's exceptional credentials compensate for the technique's margin of error.'" *Id.* at 134 (citation omitted).

¶153 Perhaps because it sensed such weaknesses, the *Logerquist* majority promised that it would "not close the door to continuing common-law evolution or refinement of either *Frye* or Rule 702 and will continue to be responsive and receptive to evolving methods of addressing any abuses in the use of expert testimony." 196 Ariz. 490, ¶ 61, 1 P.3d at 133. As the facts of the instant case attest, the time may have come for the Arizona Supreme Court to reconsider *Logerquist*.

#### CONCLUSION

¶154 For the foregoing reasons, we affirm. Hammer has requested an award of fees on appeal, which in the exercise of our discretion, we deny.

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SHELDON H. WEISBERG, Judge

CONCURRING:

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PATRICIA A. OROZCO, Presiding Judge

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PATRICIA K. NORRIS, Judge