

**COURT OF APPEALS  
DECISION  
DATED AND FILED**

**July 6, 2016**

Diane M. Fremgen  
Clerk of Court of Appeals

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**Appeal No. 2015AP1470**

**Cir. Ct. No. 2013CV271**

**STATE OF WISCONSIN**

**IN COURT OF APPEALS  
DISTRICT III**

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**UNITY BAYER BY HER GUARDIAN AD LITEM, VINCENT R.  
PETRUCELLI, LEAH BAYER AND ANDREW BAYER,**

**PLAINTIFFS-RESPONDENTS,**

**JOHN ALDEN LIFE INSURANCE COMPANY,**

**INVOLUNTARY-PLAINTIFF,**

**v.**

**BRIAN D. DOBBINS, M.D., MMIC INSURANCE, INC., PREVEA  
CLINIC, LLC AND DEF INSURANCE COMPANY,**

**DEFENDANTS-APPELLANTS,**

**INJURED PATIENTS AND FAMILIES COMPENSATION FUND,**

**DEFENDANT-CO-APPELLANT.**

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APPEAL from an order of the circuit court for Marinette County:  
DAVID G. MIRON, Judge. *Reversed and cause remanded for further proceedings.*

Before Stark, P.J., Hruz and Seidl, JJ.

¶1 STARK, P.J. Unity Bayer sustained a permanent brachial plexus injury during birth. Unity and her parents sued Brian Dobbins, the physician who performed the delivery, along with MMIC Insurance, Inc., Prevea Clinic, LLC, and the Injured Patients and Families Compensation Fund. The Bayers alleged Dobbins was negligent in various respects. In response, Dobbins<sup>1</sup> sought to introduce expert testimony that Unity’s injury was caused by maternal forces of labor, rather than Dobbins’ conduct. The circuit court granted the Bayers’ motion in limine to exclude that testimony, and Dobbins now appeals.<sup>2</sup> For the reasons explained below, we conclude the circuit court erroneously exercised its discretion by excluding the proffered testimony. We therefore reverse and remand for further proceedings.

## BACKGROUND

¶2 Leah Bayer was admitted to St. Mary’s Hospital in Green Bay on December 28, 2006, for Unity’s labor and delivery. Initially, the labor proceeded as expected. However, during the second stage of labor, after seventy-five minutes of pushing, Leah exhibited signs of exhaustion, and the progress of the

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<sup>1</sup> We refer to the defendants collectively as “Dobbins” throughout the remainder of this opinion, as well as referring to Dr. Dobbins, individually, as “Dobbins” when necessary.

<sup>2</sup> We granted Dobbins’ petition for leave to appeal a nonfinal order on October 5, 2015.

delivery slowed. At that point, Dobbins gave Leah two options: to proceed with a cesarean section, or to use a vacuum to assist with the vaginal delivery. Leah chose the vacuum-assisted vaginal delivery.

¶3 Dobbins used the vacuum to advance Unity down the birth canal, and her head was delivered. However, at that point Dobbins diagnosed a shoulder dystocia, a condition in which the fetal shoulder becomes lodged on the maternal pelvis. A shoulder dystocia is considered an obstetrical emergency because, if the physician is unable to dislodge the shoulder promptly, compression of the umbilical cord can compromise blood flow and oxygen supply to the child.

¶4 Dobbins' note regarding the delivery states that, after diagnosing the shoulder dystocia, he placed Leah in the McRoberts position, with her thighs flexed against her abdomen, and used "gentle traction" in attempt to release Unity's shoulder. When that failed, Dobbins used the Woods' corkscrew maneuver, placing his fingers inside the birth canal to rotate Unity's shoulders. Unity was then successfully delivered, about two minutes after the shoulder dystocia was first diagnosed.

¶5 After the delivery, it was noted that Unity had reduced movement of her right arm. Unity was ultimately diagnosed with a permanent right brachial plexus injury—in other words, an injury to the nerves that send signals from her neck and spine to her right arm and hand. As a result of that injury, Unity's ability to use her right arm and hand is severely limited.

¶6 The Bayers filed the instant lawsuit against Dobbins in September 2013, alleging he was negligent in his care and delivery of Unity in several respects. As relevant to this appeal, the Bayers contended Dobbins used excessive traction during the delivery. In response to that allegation, Dobbins contended he

appropriately used only gentle downward traction to deliver Unity. He asserted Unity's injury was caused by maternal forces of labor, including the forces associated with contractions and pushing.

¶7 Before trial, the Bayers filed a motion in limine asking the circuit court to exclude all expert testimony relating to Dobbins' theory that maternal forces of labor caused Unity's injury, pursuant to WIS. STAT. § 907.02(1) and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).<sup>3</sup> The Bayers argued the medical literature upon which the defense experts based their opinions was unreliable and did not support the proposition that maternal forces of labor can cause a permanent brachial plexus injury, as opposed to a temporary brachial plexus injury. The Bayers asserted their biomechanical engineering expert, Robert Allen, had "disprove[d]" the maternal forces theory in 2007 using physical modeling—that is, a childbirth simulator. The Bayers further argued the defense experts were unable to describe the precise manner in which maternal forces of labor caused Unity's injury.

¶8 In response to the Bayers' motion, Dobbins cited over twenty peer-reviewed publications supporting his claim that maternal forces of labor caused Unity's injury. In particular, Dobbins relied on "Neonatal Brachial Plexus Palsy," a compendium released in 2014 by the American College of Obstetricians and Gynecologists (ACOG). The stated purpose of the ACOG compendium was

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<sup>3</sup> In January 2011, the legislature amended WIS. STAT. § 907.02 to make Wisconsin law on the admissibility of expert testimony consistent with the federal standard set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and Federal Rule of Evidence 702. See *State v. Kandutsch*, 2011 WI 78, ¶26 n.7, 336 Wis. 2d 478, 799 N.W.2d 865.

All references to the Wisconsin Statutes are to the 2013-14 version unless otherwise noted.

[t]o review and summarize the current state of the scientific knowledge, as set forth in the peer-reviewed and relevant historical literature, about the mechanisms which may result in neonatal brachial plexus palsy. The purpose of conducting such review is to produce a report which will succinctly summarize the relevant research on the pathophysiology of neonatal brachial plexus palsy.

After completing this review, the authors of the ACOG compendium concluded:

Clinician-applied traction and lateral bending of the fetal neck have been implicated as causative factors in some cases of NBPP [neonatal brachial plexus palsy]. However, NBPP also has been shown to occur entirely unrelated to traction, with studies demonstrating cases of both transient and persistent NBPP in fetuses delivered vaginally without clinically evident shoulder dystocia or fetuses delivered by cesarean without shoulder dystocia.

¶9 The authors of the ACOG compendium further explained that:

- “Stretch in the brachial plexus occurs during the birth process itself, as shown by both computer and physical models;”
- “[W]hen one of the shoulders is restrained by the bony pelvis, any forces that continue to advance the head and neck will cause a stretch in the brachial plexus;”
- Using computer modeling, one study found that “contact force at the base of the fetal neck against the maternal symphysis pubis was more than two times higher because of maternal endogenous forces when compared with exogenous forces;”
- Other findings “indicate[] that shoulder dystocia may, in and of itself, induce a similar amount of stretch in the brachial plexus as lateral bending of the fetus’ neck;”

- “[T]he clinical and biomedical engineering evidence supports the assertion that when a shoulder is restrained either transiently or during a more significant impaction, both maternal forces and clinician forces, if applied, will stretch the brachial plexus;”
- “In addition to research within the obstetric community, the pediatric, orthopedic, and neurologic literature now stress that the existence of NBPP following birth does not a priori indicate that exogenous forces are the cause of this injury;” and
- “[M]uch of the data suggest that the occurrence of NBPP is a complex event, dependent not only on the forces applied at the moment of delivery, but also on the constellation of forces ... that have been acting on the fetus during the labor and delivery process.”

¶10 Dobbins’ response to the Bayers’ motion in limine also described how the defense experts intended to apply the maternal forces theory to the facts of the case. Dobbins informed the circuit court that Dr. Dwight Rouse and Dr. Robert DeMott, both obstetricians, would testify that: (1) Dobbins did not cause Unity’s brachial plexus injury; (2) Dobbins used appropriate maneuvers while delivering Unity; (3) Dobbins did not use excessive traction during the delivery, and the mere fact that Unity sustained a brachial plexus injury does not establish that excessive traction was used; (4) maternal forces alone can cause brachial plexus injuries; and (5) maternal forces caused Unity’s permanent brachial plexus injury. Both Rouse and DeMott cited peer-reviewed medical literature on brachial plexus injuries in support of their opinions.

¶11 Dobbins further informed the circuit court that Dr. Mark Scher, a pediatric neurologist, would testify that: (1) Unity’s injuries were not the result of

excessive traction; (2) maternal forces of labor are sufficient to cause brachial plexus injuries; (3) the amount of force a baby can endure varies, such that some babies can withstand normal traction and normal maternal forces, while others cannot; and (4) maternal forces caused Unity's permanent brachial plexus injury.

¶12 Dobbins also described the anticipated testimony of biomechanical engineer Michele Grimm, stating:

Dr. Grimm has conducted extensive research regarding the biomechanics of birth related brachial plexus injuries following shoulder dystocia. The findings of her research have been recognized by the American College of Obstetrics and Gynecology and cited in their practice bulletins pertaining to shoulder dystocia. Her research utilized a computer modeling technique through software called MADYMO.<sup>4</sup> The research was focused on how the human body responds to forces. Utilizing this software, Dr. Grimm and her colleagues developed a model of a mother's pelvis and an infant to study how the various forces in play during delivery, both maternal forces and clinician applied forces, affected a baby. Measuring such forces and observing the impact of the same during an actual live birth was not an option as it places infants at risk; thus, the computerized model was created with such specificity and precision that it could depict the actual forces present during an actual labor and delivery. During a labor and delivery, there are two basic types of forces that occur: compression (pushing) and pulling. Brachial plexus nerves as well as other nerves can be injured by each force individually as well as the forces applied collectively. These forces are naturally occurring and are produced by the mother's body in an effort to deliver the baby .... The maternal and in utero forces involved are more than sufficient to cause a compression and stretch injury .... There is no evidence in the medical record or through descriptions of the labor and delivery that Unity Bayer's neck was bent during delivery or that excessive traction

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<sup>4</sup> MADYMO stands for "Mathematical Dynamic Model." See *Ruffin ex rel. Sanders v. Boler*, 890 N.E.2d 1174, 1180 (Ill. App. Ct. 2008). It is a commercially available software program that is used in biomedical research, particularly automobile crash tests, to "take rigid bodies and look at how they interact with their environment." *Id.* at 1180-81.

was applied by Dr. Dobbins. This fact, in conjunction with her research on the maternal forces that occur during delivery[,] support[s] Dr. Grimm’s opinion that Unity’s brachial plexus injury was the result of maternal and uterine forces.

Dobbins provided the court with a list of eight peer-reviewed articles authored by Grimm regarding her research on the maternal forces theory. Dobbins also noted that Grimm’s research was cited extensively in the 2014 ACOG compendium. Dobbins further provided the court with an in-depth description of Grimm’s computer modeling techniques.

¶13 Finally, Dobbins cited three Wisconsin circuit court cases in which expert testimony on the maternal forces theory was deemed admissible under WIS. STAT. § 907.02(1). Dobbins also cited multiple cases from other jurisdictions in support of his argument that the testimony was admissible.

¶14 In conclusion, Dobbins asserted the maternal forces theory is “extensively accepted within the medical community,” and there is “comprehensive medical research devoted to it and a wealth of information attesting to its legitimacy, dependability, and reliability.” Dobbins argued the Bayers’ motion in limine to exclude maternal forces evidence “[did] nothing more than present possible cross-examination points ... rather than submit convincing reasoning for exclusion.”

¶15 A hearing to address the parties’ motions in limine was held on June 11, 2015. During the hearing, the circuit court stated it was “very close to granting” the Bayers’ motion to preclude the defense experts from testifying that maternal forces of labor caused Unity’s permanent brachial plexus injury. The court explained:

[T]he problem that I see with everything that is being done on this from the defense standpoint is that these articles are not distinguishing between permanent brachial plexus injuries and temporary brachial plexus injuries. And I am not going to have this jury confused with information regarding temporary brachial plexus injuries.

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What we're dealing with is strictly a permanent brachial plexus injury and the shoulder dystocia situation. Anything else regarding this is irrelevant and serves only to confuse the jury, and I'm not going to have it. Because I think this is the principal issue here, and it's not fair to the plaintiff to have the defense in effect throwing up red herrings and muddying up the water with something that is not a true defense.

The court did not explain its basis for concluding there was a meaningful distinction, for purposes of causation, between permanent and temporary brachial plexus injuries. Aside from one article that was the subject of a separate motion in limine, the court did not specifically address any of the medical literature cited by the defense.

¶16 When Dobbins' attorney sought clarification regarding the circuit court's ruling, the following exchange occurred:

THE COURT: Well, I'm going to allow them—they can bring in their theory of maternal forces of labor, I think it's out there enough, but if they don't have the expert testimony behind it regarding permanent brachial plexus injuries, then we're not going to listen to it. And it may very well be that this ruling guts the maternal forces of labor argument, and if that's what it does, well, then so be it.

[DOBBINS' ATTORNEY]: Well, Judge, you have all the sufficients [sic]; our experts are going to testify that the permanent brachial plexus injury in this child was caused by maternal forces.

THE COURT: But they can't identify what force.

[DOBBINS' ATTORNEY]: Well, they can say generally what the forces are.

THE COURT: I don't want generally. I want specifics. That's what I am telling you here. I want specifics about what they're claiming happened here. I'm not going to let them go into 15 different ways that this thing could possibly happen in the general population. It needs to be specific as to what happened with respect to this child.

¶17 When asked to further clarify its ruling, the circuit court confirmed that, in addition to precluding the defense experts from mentioning any of the proffered articles regarding the maternal forces theory, it was also precluding them from offering any opinions formulated in reliance on those articles. In other words, “they not only don't get to say it, but they don't get to use it, even within their own minds, to arrive at their opinions.” The court stated, “[T]his is what they want us to do now with these *Daubert* cases. I'm supposed to look at this and determine whether ... the stuff is even relevant.” The court further explained:

Everything that I'm reading here is—and it looks to me like even the articles that your people have relied upon indicate that, yes, for over 100 years, everyone agreed you get a permanent brachial plexus injury under circumstances where you have shoulder dystocia and too much traction applied by the doctor. And then, within the last 20 years, the defense bar has been coming up with this other theory that it could be the maternal forces of labor that's doing this.

¶18 The circuit court ultimately agreed with Dobbins' attorney that its ruling excluding all testimony regarding the maternal forces theory was “tantamount to a directed verdict ... on the causation issue.” The court further stated on three occasions, without prompting by the parties, that it believed a

*res ipsa loquitur* instruction would be appropriate.<sup>5</sup> On July 10, 2015, the court entered a written order “preclud[ing] defendants’ experts from testifying that the maternal forces of labor caused Unity Bayer’s Permanent Brachial Plexus Injury.” This interlocutory appeal follows.

## DISCUSSION

¶19 We review a circuit court’s decision to admit or exclude expert testimony under the erroneous exercise of discretion standard. *State v. Giese*, 2014 WI App 92, ¶16, 356 Wis. 2d 796, 854 N.W.2d 687 (citing *General Elec. Co. v. Joiner*, 522 U.S. 136, 138-39 (1997) (holding an appellate court should review a trial court’s decision to admit or exclude expert testimony under *Daubert* for an erroneous exercise of discretion)), *review denied*, 2015 WI 24, 862 N.W.2d 602. “A circuit court’s discretionary decision will not be reversed if it has a rational basis and was made in accordance with accepted legal standards in view of the facts in the record.” *Giese*, 356 Wis. 2d 795, ¶16.

¶20 The admissibility of expert testimony in Wisconsin is governed by WIS. STAT. § 907.02. Consistent with *Daubert* and Federal Rule of Evidence 702, § 907.02(1) provides:

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

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<sup>5</sup> *Res ipsa loquitur*, meaning “the thing speaks for itself,” is a doctrine “providing that, in some circumstances, the mere fact of an accident’s occurrence raises an inference of negligence that establishes a prima facie case.” BLACK’S LAW DICTIONARY 1503 (10th ed. 2014). A plaintiff is entitled to a *res ipsa loquitur* instruction “if the evidence establishes that: (1) the event causing the plaintiff’s injuries was of the kind which ordinarily does not occur in the absence of negligence, and (2) the agency or instrumentality causing the harm was within the exclusive control or right to control of the defendant.” *McGuire v. Stein’s Gift & Garden Ctr., Inc.*, 178 Wis. 2d 379, 390, 504 N.W.2d 385 (Ct. App. 1993).

knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if the testimony is based upon sufficient facts or data, the testimony is the product of reliable principles and methods, and the witness has applied the principles and methods reliably to the facts of the case.

To determine whether expert testimony is admissible under this standard, a court must engage in a three-step analysis, considering whether: (1) the witness is qualified; (2) the witness's methodology is scientifically reliable; and (3) the testimony will assist the trier of fact to determine a fact in issue. *Myers v. Illinois Cent. R.R. Co.*, 629 F.3d 639, 644 (7th Cir. 2010) (discussing the standard set forth in *Daubert* and Federal Rule of Evidence 702).

¶21 Under the *Daubert* standard, the circuit court serves as a “gate-keeper” to “ensure that the expert’s opinion is based on a reliable foundation and is relevant to the material issues.” *Giese*, 356 Wis. 2d 796, ¶18. When assessing reliability, “[t]he court is to focus on the principles and methodology the expert relies upon, not on the conclusion generated.” *Id.* The goal of the *Daubert* standard is “to prevent the jury from hearing conjecture dressed up in the guise of expert opinion.” *Giese*, 356 Wis. 2d 796, ¶19. To that end, *Daubert* set forth the following nonexhaustive list of factors a court may consider in deciding whether proposed expert testimony is reliable: whether a theory or technique can or has been tested; whether it has been subjected to peer review and publication; the known or potential rate of error; and whether the theory or technique enjoys general acceptance within the relevant scientific community. *Daubert*, 509 U.S. at 593-94; *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149-50 (1999).

¶22 Applying these principles to the instant case, we conclude the circuit court erroneously exercised its discretion by excluding the defense experts’ testimony that maternal forces of labor caused Unity’s permanent brachial plexus

injury. The court concluded the proffered testimony was not reliable primarily because the scientific literature on which the defense experts relied did not establish that maternal forces can cause permanent, as opposed to temporary, brachial plexus injuries. However, the facts of record do not establish a rational basis for that conclusion. See *Giese*, 356 Wis.2d 796, ¶16 (circuit court’s discretionary decision will not be reversed if it has a rational basis and was made in accordance with accepted legal standards in view of the facts of record).

¶23 First, the circuit court’s conclusion was based on the premise that there is a distinction, for purposes of causation, between temporary and permanent brachial plexus injuries. The court did not cite any scientific authority supporting that premise. To the contrary, the publications cited by Dobbins support the notion that, from a medical perspective, a permanent brachial plexus injury is simply a temporary brachial plexus injury that did not recover.

¶24 Second, the circuit court failed to address the ACOG compendium or any of the individual articles cited by Dobbins, aside from one article that was the subject of a separate motion in limine. The authors of the ACOG compendium reviewed “the current state of the scientific knowledge, as set forth in the peer-reviewed and relevant historical literature, about the mechanisms which may result in neonatal brachial plexus palsy.” They concluded brachial plexus injuries have “been shown to occur entirely unrelated to traction, with studies demonstrating cases of *both transient and persistent* [neonatal brachial plexus palsy] in fetuses delivered vaginally without clinically evident shoulder dystocia or fetuses delivered by cesarean without shoulder dystocia.” (Emphasis added.) In addition, at least two of the articles cited by Dobbins support the proposition that maternal

forces of labor can cause permanent, as opposed to temporary, brachial plexus injuries.<sup>6</sup> See Robert B. Gherman, et al., *Brachial Plexus Palsy Associated with Cesarean Section: An In Utero Injury?*, 177 AM. J. OBSTETRICS & GYNECOLOGY 1162, 1163 (1997) (citing six cases in which infants were diagnosed with brachial plexus palsy following cesarean sections and the condition persisted when the infants were examined at ages ranging from twelve to twenty-nine months);<sup>7</sup> Joseph G. Ouzounian, et al., *Permanent Erb Palsy: A Traction-Related Injury?*, 89 OBSTETRICS & GYNECOLOGY 139, 139 (1997) (identifying “several cases of permanent Erb palsy associated with birth that were not attributable to traction applied at delivery”).<sup>8</sup> These articles were peer-reviewed, as was the ACOG compendium. *Daubert* indicates that peer review and publication are signs of reliability. See *Daubert*, 509 U.S. at 593-94.

¶25 Third, the circuit court failed to address Grimm’s opinions and research. As discussed above, Grimm would have testified, based on computer modeling research she conducted, that maternal forces alone can cause permanent brachial plexus injuries. The record shows Grimm has published eight

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<sup>6</sup> Many of the articles Dobbins cited failed to differentiate between temporary and permanent brachial plexus injuries. See, e.g., H. Sandmire, et al., *Newborn Brachial Plexus Injuries: The Twisting and Extension of the Fetal Head as Contributing Causes*, 28 J. OBSTETRICS & GYNAECOLOGY 170 (2008) (referring generally to “brachial plexus injury” without distinguishing between permanent and temporary).

<sup>7</sup> The Gherman article explains that, when an infant with a brachial plexus injury reaches one year of age, continued nerve dysfunction is “equivalent to permanent injury.” Robert B. Gherman, et al., *Brachial Plexus Palsy Associated with Cesarean Section: An In Utero Injury?*, 177 AM. J. OBSTETRICS & GYNECOLOGY 1162, 1163-64 (1997).

<sup>8</sup> Erb’s palsy is a form of brachial plexus palsy involving the cervical roots of the fifth and sixth spinal nerves. See TABER’S CYCLOPEDIA MEDICAL DICTIONARY 701 (19th ed. 2001).

peer-reviewed articles on that topic. The circuit court did not provide any basis for concluding Grimm’s opinions or research were unreliable.

¶26 The Bayers claim the circuit court “conducted a thorough review of the scientific literature submitted by the parties and [on] which the defendants’ experts relied.” However, the Bayers’ provide no record citation in support of that assertion. The transcript of the court’s oral ruling indicates that, aside from one article that was the subject of a separate motion in limine, the court did not address or refer to any of the peer-reviewed publications cited by Dobbins.

¶27 The Bayers also observe that, in *Joiner*, the United States Supreme Court stated:

[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit*<sup>9]</sup> of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion offered.

*Joiner*, 522 U.S. at 146. The Bayers contend that is what the circuit court did here—it appropriately determined the analytical gap between the defense experts’ proffered testimony about Unity’s permanent brachial plexus injury and the scientific literature regarding temporary brachial plexus injuries was too great.

¶28 However, the record shows otherwise. Specifically, it clearly indicates that some of the publications Dobbins cited supported his experts’ proffered testimony that maternal forces can cause permanent brachial plexus injuries. Moreover, neither the Bayers nor the circuit court have explained why

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<sup>9</sup> *Ipse dixit*, meaning “he himself said it,” is used to refer to “[s]omething asserted but not proved.” BLACK’S LAW DICTIONARY, *supra*, 956.

the defense experts should not be permitted to extrapolate from the multiple peer-reviewed articles that, while supporting the maternal forces theory of causation, fail to distinguish between temporary and permanent brachial plexus injuries. *See id.* (“Trained experts commonly extrapolate from existing data.”).

¶29 The Bayers offer a few specific criticisms of the defense experts’ testimony, some of which mimic concerns expressed by the circuit court in its ruling. For instance, they complain that the defense medical experts—Drs. Rouse, DeMott, and Scher—are unable to identify the precise forces that caused Unity’s injury and cannot pinpoint the exact time her injury occurred. The Bayers also suggest that Grimm’s research is unreliable because her computer model used animal anatomy—such as goat necks and rabbit tibial nerves—to approximate fetal anatomy.

¶30 The Bayers’ criticisms of the defense expert’s inability to pinpoint the specific force causing Unity’s injury and its timing, and of Grimm’s research, ignore the fact that it would be impossible to directly study the effect of maternal forces on the fetal brachial plexus on this child, or any child, due to ethical considerations. The Bayers also ignore Grimm’s testimony that there is “substantial scientific validation for the use of animal nerves as surrogates for human nerve[s].” As a more general matter, where, as here, the proffered expert opinions are supported by a substantial body of peer-reviewed literature, we believe the kind of specific concerns raised by the circuit court and the Bayers are more appropriately directed to the testimony’s weight, rather than its admissibility. *Daubert*’s reliability inquiry “is not intended to supplant the adversarial process.” *Bielskis v. Louisville Ladder, Inc.*, 663 F.3d 887, 894 (7th Cir. 2011). “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on

the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596.

¶31 Case law from other jurisdictions supports our conclusion that the circuit court erred by excluding the defense experts’ testimony regarding the maternal forces theory. For instance, in *Estate of Ford v. Eicher*, 250 P.3d 262 (Colo. 2011), the Colorado Supreme Court concluded such testimony was admissible in a case with similar facts. The defendant physician in *Estate of Ford* encountered a shoulder dystocia while delivering a baby. *Id.* at 264. He applied downward traction in attempt to free the child’s shoulder and then employed two emergency maneuvers—the McRoberts maneuver and suprapubic pressure. *Id.* After delivery, the child was diagnosed with a brachial plexus injury, which was ultimately determined to be permanent. *Id.*

¶32 The defendant physician relied on the opinions of two expert witnesses, both of whom concluded the child’s permanent brachial plexus injury was caused by maternal forces. *Id.* Applying Colorado Rule of Evidence 702, which is equivalent to the *Daubert* standard, the trial court excluded that testimony, concluding, among other things, that the scientific principles underlying the maternal forces theory were not reasonably reliable. *Estate of Ford*, 250 P.3d at 264.

¶33 On appeal, the Colorado Supreme Court held the defense experts’ testimony on the maternal forces theory should have been admitted. The court criticized the trial court for relying too heavily on the fact that the maternal forces theory had not been tested and had no accepted error rate. *Id.* at 268-69. The court explained:

Here, ethics prevent testing the [maternal forces] theory. Such testing would subject mothers and their infants to potential injury. Instead, the theory is supported by research, clinical study, and a body of peer-reviewed literature spanning almost twenty years. It is accepted in the scientific community as illustrated by the fact that it has been adopted in authoritative texts and in the medical practice guidelines.

*Id.* at 269. The court noted the plaintiff's theory that excessive traction caused the child's injuries could not be ethically tested either. *Id.* Ultimately, the court concluded concerns about the inability to test the maternal forces theory and the lack of an accepted error rate went to the evidence's weight, rather than its admissibility. *Id.*

¶34 We find the Colorado Supreme Court's opinion in *Estate of Ford* persuasive. We also find persuasive the opinions of four other state appellate courts and two federal district courts, all of which permitted expert testimony regarding the maternal forces theory to be admitted in cases involving permanent brachial plexus injuries. See *Silong v. United States*, No. CV F 06-0474 LJO DLB, 2007 WL 2535126 (E.D. Cal. Aug. 31, 2007); *Potter v. Bowman*, No. 05-cv-00827-REB-PAC, 2006 WL 3760267 (D. Col. 2006); *Regions Bank v. Hagaman*, 84 S.W.3d 66 (Ark. Ct. App. 2002); *Ruffin ex rel. Sanders v. Boler*, 890 N.E.2d 1174 (Ill. App. Ct. 2008); *D'Amore v. Cardwell*, No. L-06-1342, 2008

WL 852791 (Ohio Ct. App. Mar. 31, 2008); *Taber v. Roush*, 316 S.W.3d 139 (Tex. App. 2010).<sup>10</sup>

¶35 The Bayers cite a recent New York appellate case that held expert testimony on the maternal forces theory was inadmissible. See *Muhammad v. Fitzpatrick*, 937 N.Y.S.2d 519 (N.Y. App. Div. 2012). However, *Muhammad* did not apply the *Daubert* standard in order to reach that conclusion. Instead, it applied the standard set forth in *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923), which requires a theory to be generally accepted as reliable in the relevant scientific community in order to be admissible. See *Muhammad*, 937 N.Y.S.2d at 521. *Muhammad* therefore does not persuade us that maternal forces evidence is inadmissible under the *Daubert* standard.

¶36 Ultimately, this is a case in which opinion in the relevant scientific field is divided regarding whether maternal forces of labor can cause permanent brachial plexus injuries. However, “[t]he mere fact that some experts may disagree about the reliability of [the maternal forces theory] does not mean that testimony about [that theory] violates the *Daubert* standard.” See *Giese*, 356 Wis. 2d 796, ¶23. “If experts are in disagreement, it is not for the court to decide

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<sup>10</sup> Dobbins cites three additional foreign cases in support of his argument that the circuit court erred by excluding his experts’ testimony regarding the maternal forces theory. However, none of those cases directly addressed the admissibility of maternal forces evidence in a context analogous to this case. In two of the additional cases cited by Dobbins, maternal forces evidence was admitted at the trial court level, but its admissibility was not at issue on appeal. See *Salvant v. Louisiana*, 935 So. 2d 646, 656-58 (La. 2006) (addressing sufficiency of the evidence to support trial court’s finding that plaintiffs failed to prove their case); *Rieker v. Kaiser Found. Hosps.*, 96 P.3d 833, 835 (Or. Ct. App. 2004) (addressing whether trial court erred by allowing defense counsel to read excerpts of medical literature during closing argument). In the third additional case cited by Dobbins, the issue was whether the *plaintiff’s* experts should be permitted to testify that maternal forces *cannot* cause a permanent brachial plexus injury. *Lawrey v. Kearney Clinic, P.C.*, No. 8:11CV63, 2012 WL 3583164, at \*3 (D. Neb. Aug. 20, 2012).

‘which of several competing scientific theories has the best provenance.’” *Id.* (quoting *Ruiz-Troche v. Pepsi Cola of P.R. Bottling Co.*, 161 F.3d 77, 85 (1st Cir. 1998)). To the contrary, “[t]he accuracy of the facts upon which the expert relies and the ultimate determinations of credibility and accuracy are for the jury, not the court.” *Id.*<sup>11</sup>

*By the Court.*—Order reversed and cause remanded for further proceedings.

Recommended for publication in the official reports.

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<sup>11</sup> In their appellate briefs, the parties focus on the reliability prong of the *Daubert* analysis. However, the circuit court’s oral ruling could be read as concluding testimony regarding the maternal forces theory was irrelevant, in that it did not relate to permanent brachial plexus injuries, such as that suffered by Unity. Any conclusion in that regard was erroneous, for the reasons set forth in ¶¶23-28.

