Supreme Court of Florida

No. SC06-118

JILL MARSH,
Petitioner,

vs.

ROBERT EARL VALYOU, JR., et al.,
Respondents.

[November 21, 2007]

PER CURIAM.

In this case, we decide whether Frye v. United States, 293 F. 1013 (D.C. Cir. 1923), applies to expert testimony causally linking trauma to fibromyalgia. We review Marsh v. Valyou, 917 So. 2d 313 (Fla. 5th DCA 2005), which certified conflict with State Farm Mutual Automobile Insurance Co. v. Johnson, 880 So. 2d 721 (Fla. 2d DCA 2004). In Marsh, the Fifth District Court of Appeal held that Frye does apply and, applying that test, held the testimony inadmissible. See Marsh, 917 So. 2d at 327, 329. The Second District Court of Appeal, on the other hand, concluded that Frye did not apply. Johnson, 880 So. 2d at 723. We have jurisdiction to resolve the certified conflict, see art. V, § 3(b)(4), Fla. Const., and

granted review. See Marsh v. Valyou, 940 So. 2d 1125 (Fla. 2006) (granting review). We conclude that Frye does not apply to expert testimony causally linking trauma to fibromyalgia and that, even if it did, such testimony satisfies it. Therefore, we quash Marsh and approve the conflicting opinion in Johnson.

I. FACTS AND PROCEDURAL HISTORY

After sustaining injuries in four separate car accidents between August 1995 and January 1998, the petitioner, Jill Marsh, filed a negligence action against a series of four defendants—the Valyous; the Burkes; PVC Holding Corp., d/b/a/ Avis Rent-a-Car ("Avis"); and Scott David Chilcut (no longer a party). Marsh, 917 So. 2d at 315. She claimed the accidents caused fibromyalgia, which is a "syndrome of widespread pain, a decreased pain threshold, and characteristic symptoms including non-restorative sleep, fatigue, stiffness, mood disturbance, irritable bowel syndrome, headache, paresthesias, and other less common features." Id. (quoting Frederick Wolfe, et al., The Fibromyalgia Syndrome: A Consensus Report on Fibromyalgia and Disability, 23 J. Rheumatology 534, 534 (1996) [hereinafter Consensus Report]).

Avis moved to preclude Marsh from presenting expert testimony that the accidents caused her fibromyalgia, arguing that the testimony did not meet the Frye standard for admissibility because the premise that trauma can cause fibromyalgia had not been generally accepted in the scientific community. Id. The trial court

held a Frye hearing and, after reviewing numerous documents related to fibromyalgia and hearing arguments of counsel, granted the motion. Id. at 315-17. It later became apparent that Marsh intended to introduce evidence that the accidents caused "myofascial pain syndrome" (MPS). Id. at 318. Again, Avis challenged the testimony under Frye and the trial court precluded evidence of a causal link between trauma and MPS. Id. Marsh then announced she had no claims apart from fibromyalgia and MPS, and the trial court entered summary judgment. Id. at 319.

Petitioner appealed, arguing: (1) the evidence is "pure opinion testimony" not subject to Frye; and (2) only the basis for an expert's opinions is subject to Frye, not the opinions and deductions drawn from those principles. Id. The Fifth District rejected these arguments and affirmed. Id. at 329. The district court likewise affirmed the order related to MPS.[1] During the pendency of the appeal, the Second District decided Johnson, holding that testimony that trauma from an automobile accident caused fibromyalgia is admissible as "'pure opinion testimony' based solely on the expert's personal experience and training." 880

1. Marsh apparently has abandoned the MPS issue, as it was not addressed at oral argument and was largely ignored in her briefs. Because the issue is beyond the scope of the certified conflict, we decline to address it. See Borden v. East-European Ins. Co., 921 So. 2d 587, 596 n.8 (Fla. 2006) (recognizing an issue as beyond the scope of the certified conflict); Kelly v. Cmty. Hosp. of the Palm Beaches, Inc., 818 So. 2d 469, 470 n.1 (Fla. 2002) (declining to address issues beyond the basis for the Court's conflict jurisdiction).

So. 2d at 723 (quoting U.S. Sugar Corp. v. Henson, 787 So. 2d 3, 14 n.10 (Fla. 1st DCA 2000), approved, 823 So. 2d 104 (Fla. 2002)). The Fifth District disagreed, concluding that testimony that trauma caused the plaintiff's fibromyalgia requires "an underlying scientific assumption—that trauma can cause fibromyalgia—which is not involved in pure opinion testimony cases," and certified conflict with Johnson. Marsh, 917 So. 2d at 327, 329.

II. ANALYSIS

For purposes of our review, the parties do not dispute Marsh's diagnosis of fibromyalgia, or that fibromyalgia is a legitimate condition. Instead, the issue is whether expert testimony causally linking trauma (the car accidents) to the onset of fibromyalgia is subject to the Frye test. Below we first explain why the testimony is not subject to Frye; and then explain that, even if the testimony had to satisfy Frye, it does.

A. Frye Does Not Apply

Many years ago, the United States Court of Appeals for the District of Columbia Circuit established a test for admitting expert testimony that espoused new or novel theories. In Frye, 293 F. at 1013, the court considered the admissibility of expert testimony as to the result of a "systolic blood pressure deception test," an early polygraph. The D.C. Circuit held:

> Just 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 field in which it belongs.
>
> We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made.

Id. at 1014.

Many state courts, as well as other federal courts, adopted the Frye test. See, e.g., 29 Charles Alan Wright & Victor James Gold, Federal Practice and Procedure § 6266 (1997) (recognizing that Frye was the "dominate [sic] standard for decades"); Alice B. Lustre, Annotation, Post-Daubert Standards for Admissibility of Scientific and Other Expert Evidence in State Courts, 90 A.L.R. 5th 453, § 2 (2001) ("[Frye] was quickly adopted by most states as well as the other federal courts."). We expressly adopted Frye in Bundy v. State, 471 So. 2d 9, 18 (Fla. 1985), and Stokes v. State, 548 So. 2d 188, 195 (Fla. 1989).

Seventy years after Frye, the United States Supreme Court held that the adoption of the Federal Rules of Evidence superseded the Frye test. See Daubert v. Merrell Dow Pharms., 509 U.S. 579, 587 (1993). Daubert adopted a different test for admissibility under which the Frye test—general acceptance in the

scientific community—is simply one factor among several. Id. at 594. Courts and commentators have since debated whether the Daubert standard is more lenient or more strict. See, e.g., Allison v. McGhan Med. Corp., 184 F.3d 1300, 1312 (11th Cir. 1999) ("While Allison argues that the thrust of the Rules and of the Eleventh Circuit has been for liberal admissibility of evidence, she fails to appreciate the tempering qualities of Rules 403, 702 and 703 under Daubert and the fact that this Circuit has been twice overruled on Daubert decisions in precedent setting Supreme Court decisions in [General Electric Co. v.] Joiner[, 522 U.S. 136 (1997)] and Kumho Tire [Co. v. Carmichael, 526 U.S. 137 (1999)], both of which imposed stricter admissibility standards than the Eleventh Circuit had deemed appropriate."); Berry v. CSX Transp., Inc., 709 So. 2d 552, 570 n.16 (Fla. 1st DCA 1998) ("It is yet a matter of debate whether the Daubert test . . . will be more liberal and allow more expert testimony than the Frye requirement . . . . "); David E. Bernstein & Jeffrey D. Jackson, The Daubert Trilogy in the States, 44 Jurimetrics J. 351, 352 (2004) ("Courts and commentators disagreed, however, regarding whether this 'revolution' in how judges were to go about deciding whether to admit scientific evidence would lead to more permissive or more restrictive admissibility rulings.") (footnote omitted); Edward K. Cheng & Albert H. Yoon, Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards, 91 Va. L. Rev. 471, 471, 510 (2005) (questioning whether a state's

adoption of Frye or Daubert makes any practical difference, but noting that "[c]ommentators have extensively debated which is the stricter standard"). Some commentators have suggested that, in practice, it makes no difference which test is used. See, e.g., Cheng & Yoon, supra, at 510.

Despite the Supreme Court's decision in Daubert, we have since repeatedly reaffirmed our adherence to the Frye standard for admissibility of evidence. See, e.g., Ibar v. State, 938 So. 2d 451, 467 (Fla. 2006) ("Florida courts do not follow Daubert, but instead follow the test set out in Frye."), cert. denied, 127 S.Ct. 1326 (2007); Brim v. State, 695 So. 2d 268, 271-72 (Fla. 1997) ("Despite the federal adoption of a more lenient standard in [Daubert], we have maintained the higher standard of reliability as dictated by Frye."); Hadden v. State, 690 So. 2d 573, 578 (Fla. 1997) ("Our specific adoption of that test after the enactment of the evidence code manifests our intent to use the Frye test as the proper standard for admitting novel scientific evidence in Florida, even though the Frye test is not set forth in the evidence code."); Flanagan v. State, 625 So. 2d 827, 829 n.2 (Fla. 1993) ("We are mindful that the United States Supreme Court recently construed Rule 702 of the Federal Rules of Evidence as superseding the Frye test. However, Florida continues to adhere to the Frye test for admissibility of scientific opinions.") (citation omitted). Other states have adhered to Frye as well. See, e.g., Wright & Gold, supra, § 6266 (noting that many states have adopted Daubert, but others have

declined to do so); Bernstein & Jackson, supra, at 356 (noting that Frye "remains the rule in a significant minority of states"); Cheng & Yoon, supra, at 473 (noting that a number of states have formally adopted Daubert, but many have chosen to retain the Frye standard).

Under Frye, "[t]he proponent of the evidence bears the burden of establishing by a preponderance of the evidence the general acceptance of the underlying scientific principles and methodology." Castillo v. E.I. Du Pont De Nemours & Co., Inc., 854 So. 2d 1264, 1268 (Fla. 2003). We review Frye issues de novo, with general acceptance considered as of the time of the appeal. Id. "By definition, the Frye standard only applies when an expert attempts to render an opinion that is based upon new or novel scientific techniques." U.S. Sugar Corp. v. Henson, 823 So. 2d 104, 109 (Fla. 2002) (emphasis added). Therefore, we have recognized that Frye is inapplicable in the "vast majority" of cases. Id.; see also Rickgauer v. Sarkar, 804 So. 2d 502, 504 (Fla. 5th DCA 2001) ("Most expert testimony is not subject to the Frye test.").

The expert medical causation testimony at issue here is not "new or novel." The American College of Rheumatology published classification criteria for fibromyalgia in 1990. Consensus Report, supra, at 534, 536 ("FM is widely accepted as a common generalized pain syndrome associated with characteristic symptoms and the finding of generalized tenderness. The 1990 ACR Criteria for

the Classification of Fibromyalgia have been established and recommended for classification purposes in research studies.") (footnote omitted). Marsh's experts based their diagnoses and opinions about the cause of her fibromyalgia on a review of her medical history, clinical physical examinations, their own experience, published research, and differential diagnosis.[2]

Experts routinely form medical causation opinions based on their experience and training. See, e.g., Cordoba v. Rodriguez, 939 So. 2d 319, 322 (Fla. 4th DCA 2006) ("Medical expert testimony concerning the causation of a medical condition will be considered pure opinion testimony and admissible when it is based solely on the expert's training and experience."); Gelsthorpe v. Weinstein, 897 So. 2d 504, 510 (Fla. 2d DCA 2005) ("[M]edical expert testimony concerning the causation of a medical condition will be considered pure opinion testimony—and thus not subject to Frye analysis—when it is based solely on the expert's training and experience."); Fla. Power & Light Co. v. Tursi, 729 So. 2d 995, 996 (Fla. 4th DCA 1999) (finding Frye inapplicable where the physician was qualified to testify about the cause of a cataract based on his knowledge and experience). And there is always the possibility that two experts may reach dissimilar opinions based on their individual experience. However, a disagreement among experts does not

2. Differential diagnosis is "an established scientific methodology in which the expert eliminates possible causes of a medical condition to arrive at the conclusion as to the actual debilitating factor." U.S. Sugar, 823 So. 2d at 106.

transform an ordinary opinion on medical causation into a new or novel principle subject to Frye. See Gelsthorpe, 897 So. 2d at 511 (recognizing that "a typical opinion on medical causation" should not be treated as a "new principle, subject to Frye analysis, simply because some other experts disagree with it and because the challenged expert does not rely on any specific authority to support his particular opinion"); Tursi, 729 So. 2d at 997 (recognizing that an ophthalmologist's opinion on causation was not based on "novel scientific evidence," as "[i]t was no more novel than an orthopedist testifying that a neck injury, which did not manifest itself with symptoms until four years after a rear-end collision, was caused by the accident"); Berry, 709 So. 2d at 571 (recognizing that the trial will be a "battle of the experts" and the fact that they derived their opinions from the same studies, but disagree on how to interpret them, is not a valid reason for excluding their testimony).

It is well-established that Frye is inapplicable to "pure opinion" testimony:

> [P]ure opinion testimony, such as an expert's opinion that a defendant is incompetent, does not have to meet Frye, because this type of testimony is based on the expert's personal experience and training. While cloaked with the credibility of the expert, this testimony is analyzed by the jury as it analyzes any other personal opinion or factual testimony by a witness.

Flanagan, 625 So. 2d at 828; see also Hadden, 690 So. 2d at 579-80 (same); Herlihy v. State, 927 So. 2d 146, 148 (Fla. 1st DCA 2006) ("[A] diagnosis based on an expert's opinion and experience, versus a specific scientific test, would not

be subject to a Frye hearing."); Gelsthorpe, 897 So. 2d at 510-11 (finding Frye inapplicable to "pure opinion testimony based upon clinical experience" where the "testimony did not rely on any study, test, procedure, or methodology that constituted new or novel scientific evidence," but instead was based on an analysis of medical records and differential diagnosis). Because testimony causally linking trauma to fibromyalgia is based on the experts' experience and training, it is "pure opinion" admissible without having to satisfy Frye. See Johnson, 880 So. 2d at 723.

Marsh's experts did not base their opinions on new or novel scientific tests or procedures, and Respondents did not challenge the patient history, examination methods, clinical practices, or other methodologies upon which they did rely. In fact, Respondents could not challenge the underlying methodology, as we have previously held that differential diagnosis is a generally accepted method for determining specific causation. Castillo, 854 So. 2d at 1271; U.S. Sugar, 823 So. 2d at 110 ("[T]here is no question that the differential diagnosis technique . . . is generally accepted in the scientific community."); see also Johnson, 880 So. 2d at 723 (recognizing that a challenge to the underlying methodology would be unsuccessful because differential diagnosis is a "standard scientific technique"). Instead, Respondents challenged the experts' conclusions that trauma caused Marsh's fibromyalgia. However, as we stated in U.S. Sugar, 823 So. 2d at 110:

> [U]nder Frye, the inquiry must focus only on the general acceptance of the scientific principles and methodologies upon which an expert relies in rendering his or her opinion. Certainly the opinion of the testifying expert need not be generally accepted as well. Otherwise, the utility of expert testimony would be entirely erased, and "opinion" testimony would not be opinion at all—it would simply be the recitation of recognized scientific principles to the fact finder. . . . We reaffirm our dedication to the principle that once the Frye test is satisfied through proof of general acceptance of the basis of an opinion, the expert's opinions are to be evaluated by the finder of fact and are properly assessed as a matter of weight, not admissibility.

See also Castillo, 854 So. 2d at 1276 (holding that the district court erred in considering "not just the underlying science, but the application of the data generated from that science in reaching the expert's ultimate conclusion"); Berry, 709 So. 2d at 567 ("[W]hen the expert's opinion is well-founded and based upon generally accepted scientific principles and methodology, it is not necessary that the expert's opinion be generally accepted as well.").

Trial courts must resist the temptation to usurp the jury's role in evaluating the credibility of experts and choosing between legitimate but conflicting scientific views. See Castillo, 854 So. 2d at 1275 ("[I]t is important to emphasize that the weight to be given to stated scientific theories, and the resolution of legitimate but competing scientific views, are matters appropriately entrusted to the trier of fact.") (quoting Berry, 709 So. 2d at 569 n.14); Rodriguez v. Feinstein, 793 So. 2d 1057, 1060 (Fla. 3d DCA 2001) (same). A challenge to the conclusions of Marsh's experts as to causation, rather than the methods used to reach those conclusions, is

a proper issue for the trier of fact. See U.S. Sugar, 823 So. 2d at 110; Castillo, 854 So. 2d at 1270, 1272, 1276; Rodriguez, 793 So. 2d at 1060 (recognizing that "to involve judges in an evaluation of the acceptability of an expert's opinions and conclusions would convert judges into fact-finders" to an extent not contemplated by Florida's Frye jurisprudence).

For these reasons, we hold that Frye does not apply to testimony of a causal link between trauma and fibromyalgia.

B. The Testimony Satisfies Frye

Even if subject to Frye, testimony linking trauma to fibromyalgia satisfies it. The purpose of Frye is to ensure the reliability of expert testimony. See, e.g., Hadden, 690 So. 2d at 578 ("Reliability is fundamental to issues involved in the admissibility of evidence."); Berry, 709 So. 2d at 568 ("At this admissibility stage of the proceedings, under Frye the court is asked to decide whether the basis of the evidence upon which plaintiffs' experts rely has a sufficient indicia of reliability."). Numerous published articles and studies recognize an association between trauma and fibromyalgia.[3] Respondents' own expert testified that he has seen situations where he thought trauma indirectly led to fibromyalgia.

3. See, e.g., A.W. Al-Allaf et al., A Case-Control Study Examining the Role of Physical Trauma in the Onset of Fibromyalgia Syndrome, 41 Rheumatology 450, 452 (2002) (concluding that the results of the study suggested "that physical trauma was significantly associated with the onset" of fibromyalgia); Dan Buskila

A lack of studies conclusively demonstrating a causal link between trauma and fibromyalgia and calls for further research do not preclude admission of the testimony. See Castillo, 854 So. 2d at 1270 ("While epidemiology is considered generally accepted in the scientific community as a way of studying causal links between disease and chemicals, these types of studies are not necessarily required for a party to meet its burden of showing a causal link by a preponderance of the evidence."); U.S. Sugar, 823 So. 2d at 110 ("[I]t is well settled that a lack of epidemiological studies does not defeat submission of expert testimony and opinions as expressed in this case."); Berry, 709 So. 2d at 568 n.12 ("[T]he fact that an epidemiological study calls for further research does not indicate uncertainty on the part of the researchers.").

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et al., Increased Rates of Fibromyalgia Following Cervical Spine Injury, 40 Arthritis & Rheumatism 446, 451 (1997) (concluding that "trauma to the neck is associated with a higher incidence of FMS"); Anil Kumar Jain et al., Fibromyalgia Syndrome: Canadian Clinical Working Case Definition, Diagnostic and Treatment Protocols—A Consensus Document, 11 J. Musculoskeletal Pain 3, 44 (2003) ("There is strong consistency in documentation that physical trauma such as a fall or motor vehicle accident, particularly a whiplash or spinal injury, can trigger FMS in some patients."); Samuel A. McLean et al., Fibromyalgia After Motor Vehicle Collision: Evidence and Implications, 6 Traffic Injury Prevention 97, 99 (2005) ("There is no disagreement regarding a close temporal association between [a motor vehicle collision] and the development of [fibromyalgia]."); Roland Staud, Fibromyalgia Pain: Do We Know the Source?, 16 Current Opinion in Rheumatology, 157, 158 (March 2004) (recognizing physical trauma as one of the "triggers" associated with fibromyalgia); Muhammad B. Yunus et al., Fibromyalgia Consensus Report: Additional Comments, 3 J. Clinical Rheumatology 324, 325 (1997) ("[I]t seems more than 51% likely that trauma does play a causative role in some FMS patients . . . .").

Frye does not require unanimity. Brim, 695 So. 2d at 272. While the precise etiology of fibromyalgia may not be fully understood, we hold that Marsh has sufficiently demonstrated the reliability of her experts' testimony, and the trial court erred in excluding it. See Berry, 709 So. 2d at 568 ("While . . . there continues to be scientific debate . . . we find the epidemiological science and methodology underlying [the expert's] testimony to be established, reliable, and well-founded.").

III. CONCLUSION

For the reasons explained above, we hold that Frye does not apply to expert testimony causally linking trauma to fibromyalgia. We further hold that, even if applicable, the testimony satisfies Frye. Therefore, we quash the Fifth District's decision in Marsh, 917 So. 2d at 313, and approve the Second District's conflicting decision in Johnson, 880 So. 2d at 721.

It is so ordered.

LEWIS, C.J., and ANSTEAD, PARIENTE, and QUINCE, JJ., concur.
ANSTEAD, J., specially concurs with an opinion, in which PARIENTE, J., concurs.
CANTERO, J., dissents with an opinion, in which WELLS and BELL, JJ., concur.

NOT FINAL UNTIL TIME EXPIRES TO FILE REHEARING MOTION, AND IF FILED, DETERMINED.

ANSTEAD, J., specially concurring.

I concur in the majority's holding that the expert opinion evidence in question was admissible. However, I do so not only for the reasons set out in the majority opinion, but also on my belief the Frye standard did not survive the adoption of Florida's Evidence Code.

While this Court has continued to apply Frye in determining the admissibility of scientific expert opinion testimony after the adoption of the Florida Rules of Evidence, it has done so without confronting the fact that those rules do not mention Frye or the test set out in Frye. Hence, unlike the United States Supreme Court, we have never explained how Frye has survived the adoption of the rules of evidence. Because, like the United States Supreme Court, I find no basis for concluding that Frye has survived Florida's adoption of an evidence code similar to the federal code, I would recede from our cases continuing to apply Frye and hold that the rules of evidence do not include a Frye test for determining the admission of expert testimony. In fact, the adoption of these evidence codes was intended to apply a straightforward relevancy test to expert evidence and, in essence, to establish a rule favoring admissibility once relevancy was established, while leaving it to the fact-finder to determine the credibility and weight of such evidence.

DAUBERT

As the United States Supreme Court explained in its seminal decision in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 585-89 (1993):

> In the 70 years since its formulation in the Frye case, the "general acceptance" test has been the dominant standard for determining the admissibility of novel scientific evidence at trial. See E. Green & C. Nesson, Problems, Cases, and Materials on Evidence 649 (1983). Although under increasing attack of late, the rule continues to be followed by a majority of courts, including the Ninth Circuit. [n.3]
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> > [N.3.] For a catalog of the many cases on either side of this controversy, see P. Giannelli & E. Imwinkelried, Scientific Evidence § 1-5, pp. 10-14 (1986 and Supp. 1991).
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> The Frye test has its origin in a short and citation-free 1923 decision concerning the admissibility of evidence derived from a systolic blood pressure deception test, a crude precursor to the polygraph machine. In what has become a famous (perhaps infamous) passage, the then Court of Appeals for the District of Columbia described the device and its operation and declared:
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> > "Just 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." 54 App. D.C., at 47, 293 F., at 1014 (emphasis added).
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> Because the deception test had "not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made," evidence of its results was ruled inadmissible. Ibid.

The merits of the Frye test have been much debated, and scholarship on its proper scope and application is legion. [n.4] Petitioners' primary attack, however, is not on the content but on the continuing authority of the rule. They contend that the Frye test was superseded by the adoption of the Federal Rules of Evidence. [n.5] We agree.

> [N.4.] See, e.g., Green, Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of Agent Orange and Bendectin Litigation, 86 Nw. U. L. Rev. 643 (1992) (hereinafter Green); Becker & Orenstein, The Federal Rules of Evidence After Sixteen Years—the Effect of "Plain Meaning" Jurisprudence, the Need for an Advisory Committee on the Rules of Evidence, and Suggestions for Selective Revision of the Rules, 60 Geo. Wash. L. Rev. 857, 876-885 (1992); Hanson, James Alphonzo Frye is Sixty-Five Years Old; Should He Retire?, 16 West. St. U. L. Rev. 357 (1989); Black, A Unified Theory of Scientific Evidence, 56 Ford. L. Rev. 595 (1988); Imwinkelried, The "Bases" of Expert Testimony: The Syllogistic Structure of Scientific Testimony, 67 N.C.L.Rev. 1 (1988); Proposals for a Model Rule on the Admissibility of Scientific Evidence, 26 Jurimetrics J. 235 (1986); Giannelli, The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later, 80 Colum. L. Rev. 1197 (1980); The Supreme Court, 1986 Term, 101 Harv. L. Rev. 7, 119, 125-127 (1987).
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> Indeed, the debates over Frye are such a well-established part of the academic landscape that a distinct term—"Frye-ologist"—has been advanced to describe those who take part. See Behringer, Introduction, Proposals for a Model Rule on the Admissibility of Scientific Evidence, 26 Jurimetrics J. 237, 239 (1986), quoting Lacey, Scientific Evidence, 24 Jurimetrics J. 254, 264 (1984).

> [N.5]. Like the question of Frye's merit, the dispute over its survival has divided courts and commentators. Compare, e.g., United States v. Williams,

> 583 F.2d 1194 (CA2 1978) (Frye is superseded by the Rules of Evidence), cert. denied, 439 U.S. 1117 (1979), with Christophersen v. Allied-Signal Corp., 939 F.2d 1106, 1111, 1115-1116 (CA5 1991) (en banc) (Frye and the Rules coexist), cert. denied, 503 U.S. 912 (1992), 3 J. Weinstein & M. Berger, Weinstein's Evidence ¶ 702[03], pp. 702-36 to 702-37 (1988) (hereinafter Weinstein & Berger) (Frye is dead), and M. Graham, Handbook of Federal Evidence § 703.2 (3d ed. 1991) (Frye lives). See generally P. Giannelli & E. Imwinkelried, Scientific Evidence § 1-5, at 28-29 (citing authorities).

We interpret the legislatively enacted Federal Rules of Evidence as we would any statute. Beech Aircraft Corp. v. Rainey, 488 U.S. 153, 163 (1988). Rule 402 provides the baseline:

> "All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible."

"Relevant evidence" is defined as that which has "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Rule 401. The Rule's basic standard of relevance thus is a liberal one.

Frye, of course, predated the Rules by half a century. In United States v. Abel, 469 U.S. 45 (1984), we considered the pertinence of background common law in interpreting the Rules of Evidence. We noted that the Rules occupy the field, id., at 49, but, quoting Professor Cleary, the Reporter, explained that the common law nevertheless could serve as an aid to their application:

> " 'In principle, under the Federal Rules no common law of evidence remains. "All relevant evidence is admissible, except as otherwise provided . . . ." In reality, of course, the body of common law knowledge continues to exist, though in the somewhat altered form

> of a source of guidance in the exercise of delegated powers.' " Id., at 51-52.

We found the common-law precept at issue in the Abel case entirely consistent with Rule 402's general requirement of admissibility, and considered it unlikely that the drafters had intended to change the rule. Id., at 50-51. In Bourjaily v. United States, 483 U.S. 171 (1987), on the other hand, the Court was unable to find a particular common-law doctrine in the Rules, and so held it superseded.

Here there is a specific Rule that speaks to the contested issue. Rule 702, governing expert testimony, 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 knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

Nothing in the text of this Rule establishes "general acceptance" as an absolute prerequisite to admissibility. Nor does respondent present any clear indication that rule 702 or the Rules as a whole were intended to incorporate a "general acceptance" standard. The drafting history makes no mention of Frye, and a rigid "general acceptance" requirement would be at odds with the "liberal thrust" of the Federal Rules and their "general approach of relaxing the traditional barriers to 'opinion' testimony." Beech Aircraft Corp. v. Rainey, 488 U.S., at 169 (citing Rules 701 to 705). See also Weinstein, Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended, 138 F.R.D. 631 (1991) ("The Rules were designed to depend primarily upon lawyer-adversaries and sensible triers of fact to evaluate conflicts"). Given the Rules' permissive backdrop and their inclusion of a specific rule on expert testimony that does not mention "general acceptance," the assertion that the Rules somehow assimilated Frye is unconvincing. Frye made "general acceptance" the exclusive test for admitting expert scientific testimony. That austere standard, absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials. [n.6]

> [N.6.] Because we hold that Frye has been superseded and base the discussion that follows on the content of the congressionally enacted Federal Rules of Evidence, we do not address petitioners' argument that application of the Frye rule in this diversity case, as the application of a judge-made rule affecting substantive rights, would violate the doctrine of Erie R. Co. v. Tompkins, 304 U.S. 64 (1938).

509 U.S. at 585-89 (emphasis supplied). Hence, a unanimous United States Supreme Court concluded that Frye's "austere standard, absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials." Id. at 589. This Court should reach the same conclusion for Florida.[4]

FLORIDA'S EVIDENCE CODE

Of course, Florida's Evidence Code is patterned substantially upon the Federal Rules of Evidence. Section 90.702 of Florida's code is essentially identical to Federal Rule 702. And, to paraphrase the United States Supreme Court's opinion in Daubert, nothing in section 90.702 or elsewhere in Florida's Evidence Code establishes "general acceptance" as a prerequisite to the admissibility of expert opinion evidence. Indeed, such a rigid test is at odds with both the Florida code and " 'the liberal thrust' of the [code] . . . and . . . [its]

4. While I agree with the Supreme Court's analysis in Daubert rejecting Frye's viability after the evidence code was adopted, I also agree with the separate opinion of Chief Justice Rehnquist that the balance of the majority's opinion was unnecessary. See Daubert, 509 U.S. at 598 (Rehnquist, C.J., concurring in part and dissenting in part). Hence, while I would conclude that Frye no longer controls, I would apply the relevancy standard set out in Florida's Evidence Code to determine whether expert opinion evidence should be admitted.

'general approach of relaxing the traditional barriers to "opinion" testimony.' " 509 U.S. at 589 (quoting Beech, 488 U.S. at 169).

Daubert was decided in 1993, years after the adoption of both the federal rules and the Florida Evidence Code. However, following the adoption of Florida's Evidence Code a number of Florida appellate decisions came to the same conclusion as the Supreme Court in Daubert, years before Daubert was decided. And, while this Court has clung to its reliance upon Frye, no opinion of the Court has ever confronted or explained how Frye is consistent with the provisions of Florida's Evidence Code. The plain fact is, as fully and cogently explained by the United States Supreme Court in Daubert, Frye is not consistent with Florida's code.

While this Court has never directly confronted the issue, the district courts have discussed the tension between Frye and the terms of the Evidence Code, and reached the same conclusion the United States Supreme Court later reached in Daubert. See, e.g., Brown v. State, 426 So. 2d 76 (Fla. 1st DCA 1983). In Brown, the First District explained:

> The relevancy approach [of the Evidence Code] is preferred over the Frye rule because of problems inherent in the application of Frye and due to policy reasons. See Giannelli, supra. One of the major criticisms directed against applying the Frye rule to a given scientific technique is that it would indiscriminately bar the admissibility of such evidence despite whether it meets the twin tests of logical and legal relevance. For example, as pointed out by

> Professor Giannelli, a rigid application of Frye would require a court to await the passage of time until such time as a new test or procedure has been developed to the point that the test or procedure has been developed to the point that the test or procedure has become "generally accepted." This creates a "cultural lag" during the technique's development, requiring that relevant evidence which might be demonstrated to be completely reliable must be excluded from consideration. See Giannelli, supra, at 1223 nn. 201 & 202; contrast United States v. Addison, 498 F.2d 741, 743-744 (D.C. Cir. 1974). Plainly, the Frye rule engenders an impediment to the admissibility of reliable evidence without considering the cost to society. Admissibility of Testimony Influenced by Hypnosis, supra, 67 Va. L. Rev. at 1214, n. 77; see also Hurd, 432 A.2d at 94.

Brown, 426 So. 2d at 87 n.17. In addition, the Brown opinion quoted McCormick's Handbook of the Law of Evidence § 203 (Edward W. Cleary ed., 2nd ed. 1972):

> The practice approved in the last mentioned case [Coppolino] is the one which should be followed in respect to expert testimony and scientific evidence generally. "General scientific acceptance" is a proper consideration for taking judicial notice of scientific facts, but not a criterion for the admissibility of scientific evidence. Any relevant conclusions which are supported by a qualified expert witness should be received unless there are other reasons for exclusion. Particularly, probative value may be overborne by the familiar dangers of prejudicing or misleading the jury, and undue consumption of time. If the courts used this approach, instead of repeating a supposed requirement of "general acceptance" not elsewhere imposed, they would arrive at a practical way of utilizing the results of scientific advances.

Brown, 426 So. 2d at 88 (quoting McCormick, § 203).

In Hawthorne v. State, 470 So. 2d 770 (Fla. 1st DCA 1985), the First District, without a mention of Frye, found no error in the trial court's exclusion of

an expert witness's testimony without prejudice to the reconsideration of that issue upon retrial. In a separate opinion, however, Judge Ervin provided an extensive and scholarly analysis concluding that the Frye test did not survive the adoption of Florida's Evidence Code. 470 So. 2d at 774 (Ervin, C.J., concurring in part and dissenting in part). I commend Judge Ervin's compelling analysis to the reader and quote here only his concluding remarks:

> It is time for the judiciary system to recognize that the Evidence Code establishes a different standard in assessing the admissibility of novel scientific theories or techniques than does Frye. Their admissibility is not dependent solely upon proof that they have not generally been accepted by the relevant field—although lack of general acceptance, when balanced against all counterweights, pursuant to section 90.403, is clearly a component to be considered in determining whether the probative value of such evidence is substantially outweighed by countervailing factors. If the challenged evidence, such as that in the present case, is logically relevant, and if balancing does not reveal it to be substantially outweighed by the factors enumerated in section 90.403, the trial judge should tip his hand in favor of admissibility.
>
> Had the trial court below been appropriately directed to follow the procedure that appears to be required by the Evidence Code, and if it had nevertheless exercised its discretion to exclude, such decision would have constituted an abuse of discretion. The weight and quality of the evidence clearly demonstrate that Dr. Walker's proffered testimony should have been admitted—particularly when it is considered that such evidence was crucial to appellant's claim of self-defense. [n.10]
>
> > [N.10.] A trial court's denial of a defendant's use of probative evidence in a criminal trial may rise to the level of constitutional dimension. Although a defendant has no constitutional right to introduce irrelevant evidence, if the evidence has probative worth, it should be measured by a different standard than the usual test of abuse of

> discretion. See State v. Dorsey, 87 N.M. 323, 532 P.2d 912 (Ct. App.); aff'd, 88 N.M. 184, 539 P.2d 204 (1975). See also Westen, The Compulsory Process Clause, 73 Mich. L. Rev. 73, 149-59 (1974). Cf. United States v. Dwyer, 539 F.2d 924, 928 (2nd Cir.1976) (trial court erred in excluding the testimony of the only defense witness who could establish the insanity of defendant).
>
> Today's opinion points out the need for a definitive statement from the Florida Supreme Court defining the respective roles of the trial and appellate courts, when carrying out their responsibilities under the Florida Evidence Code, in determining the admissibility of new scientific theories or techniques. Pursuant to Florida Rule of Appellate Procedure 9.030(a)(2)(A)(v), I would certify the following question to be one of great public importance:
>
> > HAS THE FRYE STANDARD OF GENERAL ACCEPTANCE WITHIN THE PARTICULAR SCIENTIFIC COMMUNITY, AS A PRECONDITION TO THE ADMISSIBILITY OF NOVEL SCIENTIFIC EVIDENCE, SURVIVED THE ADOPTION OF THE FLORIDA EVIDENCE CODE? AND IF IT HAS NOT, DOES IT NEVERTHELESS REMAIN A FACTOR TO BE CONSIDERED WHEN BALANCING THE PROBATIVE WORTH OF THE PROFFERED EVIDENCE AGAINST COUNTERVAILING FACTORS, AS PROVIDED BY SECTION 90.403, FLORIDA STATUTES?

470 So. 2d at 787-88. Unfortunately, Hawthorne was not reviewed by this Court, and, although this Court has subsequently rejected Daubert in favor of Frye, Judge Ervin's proposed question has never been properly answered by this Court other than in summary fashion. See, e.g., Ibar v. State, 938 So. 2d 451, 467 (Fla. 2006) (summarily stating Florida adheres to Frye despite ruling in Daubert), cert. denied, 127 S. Ct. 1326 (2007).

Following the Hawthorne decision, the Fourth District, in Kruse v. State, 483 So. 2d 1383 (Fla. 4th DCA 1986), followed Judge Ervin's lead in concluding that Florida's Evidence Code, and not Frye, should control the admission of expert opinion evidence:

> The Florida Evidence Code became effective in criminal cases in 1979. Sections 90.401 and 90.402, Florida Statutes (1983), set out a general relevancy standard for the admission of evidence. Sections 90.702 and 90.703 deal specifically with expert testimony:
>
> > 90.702 Testimony by experts.—If scientific, technical, or other specialized knowledge will assist the trier of fact in understanding the evidence or in determining a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify about it in the form of an opinion; however, the opinion is admissible only if it can be applied to evidence at trial.
> >
> > 90.703 Opinion on ultimate issue.—Testimony in the form of an opinion or inference otherwise admissible is not objectionable because it includes an ultimate issue to be decided by the trier of fact.
>
> In addition, section 90.403 provides:
>
> > 90.403 Exclusion on grounds of prejudice or confusion.—Relevant evidence is inadmissible if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of issues, misleading the jury, or needless presentation of cumulative evidence. This section shall not be construed to mean that evidence of the existence of available third-party benefits is inadmissible.
>
> Section 90.702 contains three requirements: (1) that the opinion evidence be helpful to the trier of fact; (2) that the witness be qualified as an expert; and (3) that the opinion evidence can be applied to evidence offered at trial. These provisions embody a liberal policy on

the admission of expert evidence, generally rendering such evidence admissible to the extent that it is helpful to the trier of fact. Section 90.403 adds a fourth test barring evidence that, although technically relevant, presents a substantial danger of unfair prejudice that outweighs its probative value.

In Brown v. State, 426 So. 2d 76 (Fla. 1st DCA 1983), Judge Ervin discussed the evolution in Florida decisions, from a rigid test of admissibility of evidence relating to new scientific procedures, to the more generous relevancy standard contained in the evidence code. Id. at 85-90; see also Fay v. Mincey, 454 So. 2d 587, 593-94 (Fla. 2d DCA 1984), and Hawthorne v. State, 470 So. 2d 770 (Fla. 1st DCA 1985) (Ervin, J., concurring in part and dissenting in part). The more rigid standard evolved from the decision in Frye v. United States, 293 Fed. 1013 (D.C. Cir. 1923), which barred the admission of the results of a lie detector test because the test had not been generally accepted by the scientific community. Hence, the requirement of general acceptance was imposed. As Judge Ervin noted in his partial dissent in Hawthorne, the evidence code contains no reference to general acceptance in regard to the receipt of expert opinion evidence.

With some qualification, we believe the relevancy approach set out in the evidence code is the appropriate standard for determining the admissibility of expert testimony on child sexual abuse. The statutory relevancy standard also comports with the holdings of the Florida Supreme Court in the area of expert testimony. The court has stated that while trial courts have broad discretion in determining the range of subjects on which an expert may testify, such testimony should usually be received only where the disputed issue for which the evidence is offered, is beyond the ordinary understanding of the jury. Johnson v. State, 393 So. 2d 1069, 1072 (Fla. 1980). This view is consistent with the first requirement of section 90.702, that the opinion evidence be helpful to the trier of fact, as well as the provisions of section 90.403, that the danger of prejudice may outweigh the value of the evidence.

483 So. 2d at 1384-85.[5] Despite the numerous district court decisions finding Frye superseded by the Evidence Code, this Court subsequently announced in summary fashion its continued reliance on Frye, while not directly confronting the impact of the application of the Evidence Code to the issue. See Ibar, 938 So. 2d at 467. I would recede from those decisions for the same reasons articulated in Daubert, Brown, Hawthorne and Kruse.[6]

THIS CASE

There are courts that have addressed the exact question of expert testimony linking physical trauma to fibromyalgia and found it admissible pursuant to the rule announced in Daubert. For example, in Reichert v. Phipps, 84 P.3d 353 (Wyo. 2004), the Wyoming Supreme Court reversed a trial court's order prohibiting the plaintiff from offering evidence that the car crash at issue in the case caused her fibromyalgia. Id. at 355. The court framed its analysis as follows:

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5. The Fourth District subsequently affirmed its position that the Evidence Code contained a four-part test as outlined in Kruse for determining the admissibility of expert opinion evidence. See CSX Transp., Inc. v. Whittler, 584 So. 2d 579, 584 (Fla. 4th DCA 1991).

6. A part of our Frye law that is particularly troubling is our direction to appellate courts that they are not only to conduct a de novo review of the general acceptance issue but they should also examine any extrajudicial materials available at the time of appeal to resolve the issue. Hadden v. State, 690 So. 2d 573, 579 (Fla. 1997). Of course, any such materials considered by the appellate court would not have been subject to cross-examination or other examination for reliability by the parties or the trial court. Such a novel procedure represents a significant break from our established law limiting appellate courts to a consideration of the trial record.

> We are not deciding whether trauma can cause [fibromyalgia], or even whether, as a general proposition, there is sufficient scientific foundation for the theory to allow juries to decide the issue as a question of fact. . . . The question before us is limited to whether this particular trial court, given the evidence and arguments at the time, reasonably could have concluded as it did.

Id. at 357. In finding that the trial court abused its discretion in excluding the evidence, the court found that, since some experts do believe that trauma can cause fibromyalgia, the proffered expert had reliable grounds for reaching such a conclusion and that therefore his opinion was admissible. Id. at 364 (emphasis added).

> In the instant case, the proffered expert opinions were based on the petitioner's self-reported symptoms, filtered through the two doctors' perceptions after years of experience with similar patients. The opinions were given in the overall context of a professional controversy over the link between physical trauma and FM, in which some experts take the position that there is, indeed, a causal connection. We conclude that, under these circumstances, the trial court abused its discretion in not allowing the jury to determine the weight to give the opinion testimony.

Id.

The Nebraska Supreme Court reached a similar conclusion in Epp v. Lauby, 715 N.W.2d 501, 504 (Neb. 2006), involving an action for damages in which the plaintiff allegedly developed fibromyalgia after a car accident. The trial court conducted a Daubert hearing concerning Epp's expert testimony that the accident caused the fibromyalgia, and the trial court excluded the evidence, concluding that medical science was insufficient to link the trauma to the condition. Id. at 506. Under an abuse of discretion standard, the supreme court overturned the trial

court's ruling on the expert testimony after phrasing the question as follows: "[W]e are deciding whether there was sufficient evidence presented to allow Epp's experts, Handke and Bennett, to opine that physical trauma was the cause of Epp's fibromyalgia." Id. at 507. The court, noting the "professional controversy regarding the causal relationship between physical trauma and fibromyalgia," ultimately concluded that "general acceptance of the causal link . . . is not determinative of the admissibility of expert testimony under Daubert/Schafersman standards." Id. at 509-10. "So long as the expert's opinion is based on reliable methodology, his or her opinion is admissible, whether or not the court agrees with the expert's conclusion." Id. at 510. The court found that the experts' testimony was supported by sufficient medical and scientific literature supporting the theory that fibromyalgia may be caused by physical trauma. Id.

> Although the issue is disputed, there is support in the medical literature for the theory that physical trauma can cause fibromyalgia. That support, while controverted, is the result of peer-reviewed research conducted pursuant to appropriate methods of scientific inquiry. While there is not a sufficient scientific consensus to say that the theory is generally accepted, nor has a rate of error been established, the theory that trauma can cause fibromyalgia has been the subject of empirical research, the results of which have been subjected to peer review and publication. See Daubert v. Merrell Dow Pharmaceuticals, Inc., supra. We cannot conclude that Handke and Bennett's reliance on this research, instead of literature to the contrary, was methodologically unreliable. If proffered scientific evidence rests on sound scientific reasoning or methodology and properly can be applied to the facts in issue, it meets the Daubert requirements for admissibility, even if the conclusion is novel or controversial. See State v. Dahood, supra. Despite the existence of

> "spirited dissent," see State v. Sampson, 167 Or. App. at 503, 6 P.3d at 553, the lack of a scientific consensus on the link between trauma and fibromyalgia was not sufficient to render reliance upon that literature methodologically unreliable. We, therefore, conclude that the evidence was sufficient to support the theory of a causal relationship between physical trauma and fibromyalgia and that the trial court abused its discretion in concluding otherwise.

Id. at 511. Accordingly, the supreme court remanded for a new trial on the issue of damages, since liability in the case was admitted. Id. at 512.

CONCLUSION

I would hold that Frye has been superseded by the adoption of Florida's Evidence Code, and that under the relevancy standard contained in the code the expert opinion evidence in question was admissible. Hence, I concur in the majority's decision.

PARIENTE, J., concurs.

CANTERO, J., dissenting.

I respectfully disagree with the majority's holding that testimony causally linking trauma to fibromyalgia is "pure opinion" testimony not subject to the Frye test. I also disagree that such testimony would satisfy Frye. I would approve the Fifth District's opinion in Marsh v. Valyou, 917 So. 2d 313 (Fla. 5th DCA 2005), and disapprove the Second District's conflicting decision in State Farm Mutual Automobile Insurance Co. v. Johnson, 880 So. 2d 721 (Fla. 2d DCA 2004).

Below I demonstrate (I) why expert testimony causally linking trauma to fibromyalgia must satisfy Frye, and (II) that Petitioner, as the proponent of the evidence, has failed to demonstrate that it is generally accepted in the scientific community that trauma can cause fibromyalgia.

I. THE TESTIMONY IS SUBJECT TO FRYE

The Frye test is simple to state, if not always easy to apply: "[I]n order to introduce expert testimony deduced from a scientific principle or discovery, the principle or discovery 'must be sufficiently established to have gained general acceptance in the particular field in which it belongs.'" Flanagan v. State, 625 So. 2d 827, 828 (Fla. 1993) (quoting Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923)). "This standard requires a determination, by the judge, that the basic underlying principles of scientific evidence have been sufficiently tested and accepted by the relevant scientific community." Brim v. State, 695 So. 2d 268, 272 (Fla. 1997); see also Ramirez v. State, 810 So. 2d 836, 843 (Fla. 2001) ("Evidence based on a novel scientific theory is inherently unreliable and inadmissible in a legal proceeding in Florida unless the theory has been adequately tested and accepted in the relevant scientific community."). The underlying theory of Frye is that "a courtroom is not a laboratory, and as such it is not the place to conduct scientific experiments. If the scientific community considers a procedure or process unreliable for its own purposes, then the procedures must be considered

less reliable for courtroom use." Stokes v. State, 548 So. 2d 188, 193-94 (Fla. 1989).

A. Novel Scientific Testimony Versus "Pure Opinion"

Courts traditionally have exempted pure opinion testimony from the requirements of Frye on the theory that the testimony is based on the expert's personal experience and training. See, e.g., Hadden v. State, 690 So. 2d 573, 580 (Fla. 1997); Flanagan, 625 So. 2d at 828; State v. Demeniuk, 888 So. 2d 655, 659 (Fla. 5th DCA 2004). As we explained in Flanagan:

> [P]ure opinion testimony, such as an expert's opinion that a defendant is incompetent, does not have to meet Frye, because this type of testimony is based on the expert's personal experience and training. While cloaked with the credibility of the expert, this testimony is analyzed by the jury as it analyzes any other personal opinion or factual testimony by a witness.

625 So. 2d at 828. The majority holds that testimony causally linking trauma to fibromyalgia is just such "pure opinion" testimony. This conclusion broadens this supposedly narrow exception way beyond its limited purpose.

Testimony is "pure opinion" only when it is based solely on experience and training, and does not rely on a novel scientific principle, test, or methodology:

> "Pure opinion" refers to expert opinion developed from inductive reasoning based on the experts' own experience, observation, or research, whereas the Frye test applies when an expert witness reaches a conclusion by deduction, from applying new and novel scientific principle, formula, or procedure developed by others.

Demeniuk, 888 So. 2d at 659 (quoting Holy Cross Hosp., Inc. v. Marrone, 816 So. 2d 1113, 1117 (Fla. 4th DCA 2001)). We first recognized that pure opinion testimony is not subject to Frye in Flanagan, 625 So. 2d at 828. There, we recognized the distinction between pure opinion testimony derived solely from "experience and training" and expert testimony that "necessarily relies on some scientific principle or test" and rejected labeling the pedophile/sex offender profile testimony at issue "pure opinion":

> Profile testimony . . . by its nature necessarily relies on some scientific principle or test, which implies an infallibility not found in pure opinion testimony. The jury will naturally assume that the scientific principles underlying the expert's conclusion are valid. Accordingly, this type of testimony must meet the Frye test, designed to ensure that the jury will not be misled by experimental scientific methods which may ultimately prove to be unsound.

Id. Similarly, in Hadden, 690 So. 2d at 581, we applied Frye to testimony that an alleged victim of sexual abuse exhibited symptoms consistent with those of a child who has been sexually abused. We explained that the Frye test "requires that the scientific principles undergirding this evidence be found by the trial court to be generally accepted by the relevant members of its particular field." Hadden, 690 So. 2d at 576. We rejected labeling the evidence "pure opinion":

> We differentiate pure opinion testimony based upon clinical experience from profile and syndrome evidence because profile and syndrome evidence rely on conclusions based upon studies and tests. Further, we find that profile or syndrome evidence is not made admissible by combining such evidence with pure opinion testimony

> because such a combination is not pure opinion evidence based solely upon the expert's clinical experience.

Id. at 580 (emphasis added).

Therefore, in both Flanagan and Hadden we recognized that pure opinion is not subject to Frye, but emphasized that the underlying scientific principles are. Flanagan, 625 So. 2d 828; Hadden, 690 So. 2d at 576, 580; see also Brim, 695 So. 2d 272 (recognizing that under Frye, "the burden is on the proponent of the evidence to prove the general acceptance of both the underlying scientific principle and the testing procedures used to apply that principle to the facts at hand") (quoting Ramirez v. State, 651 So. 2d 1164, 1168 (Fla. 1995)).

These cases dictate that where an expert's opinion is based on an underlying scientific principle, that underlying principle is subject to Frye. See also Hildwin v. State, 951 So. 2d 784, 792 (Fla. 2006) ("The principal inquiry under the Frye test is whether the scientific theory or discovery from which an expert derives an opinion is reliable.") (quoting Ramirez, 651 So. 2d at 1167).

In this case, the underlying scientific principle is that trauma can cause fibromyalgia. That principle must pass the Frye test. I agree that testimony that a particular patient, such as Marsh, suffers from fibromyalgia, if based on clinical experience, may constitute pure opinion not subject to Frye. In this case, however, the objection was not to testimony that Marsh suffers from fibromyalgia, but to testimony that it was caused by trauma. While the experts may assert that their

testimony is based on their experience and training, it is also necessarily based on an underlying (and as yet unproven) scientific principle that trauma can cause fibromyalgia. Marsh, 917 So. 2d at 327 (recognizing that the testimony requires "an underlying scientific assumption—that trauma can cause fibromyalgia—which is not involved in pure opinion cases"); see also Kaelbel Wholesale, Inc. v. Soderstrom, 785 So. 2d 539, 547 (Fla. 4th DCA 2001) (rejecting the argument that causation testimony was pure opinion, concluding that it "was not based upon personal experience or training" but instead "was based upon scientific principles to reach the opinions and conclusions drawn"). This theory of general causation does not become admissible simply because it is the opinion of some experts that trauma caused Marsh's fibromyalgia. See Hadden, 690 So. 2d at 580 (recognizing that evidence is not made admissible by combining it with "pure opinion" testimony); Marsh, 917 So. 2d at 327 ("[I]t is counterintuitive to permit an expert to ignore scientific literature accepted by the general scientific community in favor of the expert's personal experience to reach a conclusion not generally recognized in the scientific community and then allow testimony about that conclusion on the basis that it is 'pure opinion.'"). As we recognized in Hadden:

> Novel scientific evidence must also be shown to be reliable on some basis other than simply that it is the opinion of the witness who seeks to offer the opinion. In sum, we will not permit factual issues to be resolved on the basis of opinions which have yet to achieve general acceptance in the relevant scientific community; to do otherwise would permit resolutions based upon evidence which has not been

> demonstrated to be sufficiently reliable and would thereby cast doubt on the reliability of the factual resolutions.

690 So. 2d at 578; see also Ramirez, 810 So. 2d at 844 (recognizing that Frye requires more than "[a] bald assertion by the expert that his deduction is premised upon well-recognized scientific principles").

The majority's holding that an opinion about specific causation need not pass the Frye test, even where the underlying theory of general causation is not accepted, in effect renders specific causation testimony always admissible as the "pure opinion" of the expert. This constitutes a sea change in Florida law, as Florida courts have regularly applied Frye to causation testimony. See, e.g., Shepard v. Barnard, 949 So. 2d 232, 233 (Fla. 5th DCA 2007) (applying Frye to testimony that the use of Verteporfin could cause permanent photoallergy); Hawkins v. State, 933 So. 2d 1186, 1189 (Fla. 4th DCA 2006) (finding Frye applicable to an opinion about the cause of a silicone embolism), review dismissed, 950 So. 2d 414 (Fla. 2007); Demeniuk, 888 So. 2d at 657, 659 (finding Frye applicable to testimony of a causal connection between selective serotonin reuptake inhibitors and suicide/involuntary alcohol consumption where the opinions "were based on a novel scientific theory"); David v. Nat'l R.R. Passenger Corp., 801 So. 2d 223, 226 (Fla. 2d DCA 2001) (remanding for a determination of whether the theory that repetitive motion can cause carpal tunnel syndrome was generally accepted); Kaelbel Wholesale, Inc., 785 So. 2d at 548-50 (rejecting

testimony linking ciguatera poisoning to the development of Guillain-Barré Syndrome where the theory of causation was not generally accepted); Poulin v. Fleming, 782 So. 2d 452, 452 (Fla. 5th DCA 2001) (applying Frye to testimony that prenatal exposure to radiation caused schizencephaly).

As I explain more fully below, we have approved, and have seemingly applied, this approach. See U.S. Sugar Corp. v. Henson, 787 So. 2d 3, 5 (Fla. 1st DCA 2000) (applying Frye to testimony that the cumulative effect of pesticide exposure caused phrenetic nerve mononeuropathy and finding both the general causation theory and specific causation methodology to be generally accepted), approved, 823 So. 2d at 109 (commending and approving "the thoughtful analysis performed by the district court below evaluating the general acceptance of the methodologies and scientific principles supporting Henson's experts' opinions").

Other courts recognize this proposition as well. As a federal appellate court has said,

> The underlying predicates of any cause-and-effect medical testimony are that medical science understands the physiological process by which a particular disease or syndrome develops and knows what factors cause the process to occur. Based on this predicate knowledge, it may then be possible to fasten legal liability for a person's disease or injury.

Black v. Food Lion, Inc., 171 F.3d 308, 314 (5th Cir. 1999); cf. McClain v. Metabolife Int'l Inc., 401 F.3d 1233, 1239 (11th Cir. 2005) (noting that in toxic tort cases where the medical community does not generally recognize an agent as

both toxic and capable of causing the injury alleged, "the Daubert analysis covers not only the expert's methodology for the plaintiff-specific questions about individual causation but also the general question of whether the drug or chemical can cause the harm plaintiff alleges"). Permitting an expert to testify that X caused Y in a specific case without requiring the general acceptance of the theory that X can ever cause Y expands the "pure opinion" exception to the point where it swallows the rule.

B. U.S. Sugar and Castillo

Two of our recent decisions confirm the applicability of Frye to general causation testimony. See U.S. Sugar Corp. v. Henson, 823 So. 2d 104 (Fla. 2002); Castillo v. E.I. Du Pont De Nemours & Co., 854 So. 2d 1264 (Fla. 2003). U.S. Sugar involved a Frye challenge to an expert's opinion that the cumulative effect of pesticide exposure caused the claimant's phrenetic nerve mononeuropathy. 823 So. 2d at 106. The First District applied Frye to conclude:

> Because our de novo review establishes that there is general acceptance in the relevant scientific community both (i) for claimant's general causation theory that certain pesticides to which he was repeatedly exposed over a long period of time can cause peripheral neuropathy, and (ii) for the differential diagnosis methodology employed by claimaint's physicians, which they used to exclude other facts that might cause his condition and to determine that his pesticide exposure specifically caused his injury, we affirm.

U.S. Sugar Corp., 787 So. 2d at 5 (emphasis added). On review, we agreed that it is "generally accepted in the scientific community that 'organophosphates are neurotoxic'" and that "[b]ecause of this generally accepted scientific foundation, the 'extrapolation' method utilized by these experts in concluding that chronic exposure to these pesticides caused claimant's condition is an acceptable scientific technique in this case." U.S. Sugar, 823 So. 2d at 109 (quoting U.S. Sugar, 787 So. 2d at 16-17). We went on to "highlight" (referring to the Third District's decision in E.I. DuPont De Nemours & Co., Inc. v. Castillo, 748 So. 2d 1108 (Fla. 3d DCA 2000), quashed, 854 So. 2d 1264 (Fla. 2003)) that "under Frye, the inquiry must focus only on the general acceptance of the scientific principles and methodologies upon which an expert relies in rendering his or her opinion." U.S. Sugar, 823 So. 2d at 110.

The other case in which we confirmed Frye's application to general causation was Castillo, 854 So. 2d at 1264. That case involved expert testimony that fetal exposure to a fungicide (Benlate) caused a birth defect (microphthalmia). Id. at 1267. The Frye challenge related to the methodology for determining whether, and at what level, Benlate could cause birth defects in humans. Id. The defendants acknowledged that the in vivo tests (animal toxicology) and in vitro tests (analysis of the effects of suspected substances on isolated cell systems) underlying the opinion were generally accepted methods for analyzing toxicology,

but they argued that the expert's extrapolation from the tests to conclude that Benlate is a human teratogen was not generally accepted. Castillo, 748 So. 2d at 1116, 1118. The district court found that the expert's extrapolation from the tests was subject to and failed to satisfy Frye. Id. at 1120-21 ("[W]here, as here, plaintiffs wish to establish a substance's teratogenicity in human beings based on animal and in vitro studies, the methodology used in the studies, including the method of extrapolating from the achieved results, must be generally accepted in the relevant scientific community."). On review, we disagreed, concluding that the expert conclusions reached through extrapolation fell outside of Frye consideration:

> By considering the extrapolation of the data from the admittedly acceptable experiments, the Third District went beyond the requirements of Frye, which assesses only the validity of the underlying science. Frye does not require the court to assess the application of the expert's raw data in reaching his or her conclusion. We therefore conclude that the Third District erroneously assessed the Castillos' expert testimony under Frye by considering not just the underlying science, but the application of the data generated from that science in reaching the expert's ultimate conclusion.

Castillo, 854 So. 2d at 1276 (emphasis added).

U.S. Sugar and Castillo confirm that while expert opinions deduced from generally accepted principles are not subject to Frye, the underlying principles are. U.S. Sugar, 823 So. 2d 109-10 ("[W]hen the expert's opinion is based on generally accepted scientific principles and methodology, it is not necessary that the expert's

deductions based thereon and opinion also be generally accepted as well."); Castillo, 854 So. 2d at 1269, 1276 ("We must consider whether the scientific principles upon which the Castillo's experts based their opinions are generally accepted in the scientific community.").

The majority characterizes the challenge in this case as one to the "experts' conclusions that trauma caused Marsh's fibromyalgia." Majority op. at 11. But Respondents do not challenge the experts' conclusions. Rather, they challenge the premise behind them—the theory that trauma can ever cause fibromyalgia. If it were generally accepted in the scientific community that trauma can cause fibromyalgia, then I would agree that the experts' deduction from that principle to conclude that trauma caused Marsh's fibromyalgia would not be subject to Frye. See Castillo, 854 So. 2d at 1276; U.S. Sugar, 823 So. 2d at 110. It is that underlying principle, however, that is contested here.

I also disagree with the majority's conclusion that Marsh's experts' testimony is not subject to Frye simply because the methodology used—differential diagnosis—is generally accepted. Majority op. at 11. Differential diagnosis is certainly a generally accepted methodology for determining specific causation. The use of differential diagnosis alone, however, does not exempt causation testimony from Frye. Differential diagnosis is merely a "scientific methodology in which the expert eliminates possible causes of a medical condition

to arrive at the conclusion as to the actual debilitating factor." U.S. Sugar, 823 So. 2d at 106. It is a process of elimination—the patient's condition, call it X, was not caused by A, B, or C; therefore, X must have been caused by D. But before causes A, B, and C can be scientifically excluded as a specific cause (i.e., A did not cause X), they must first be scientifically included as a general cause (i.e., A can cause X). Experts cannot conclude, through a process of elimination, that trauma caused the plaintiff's fibromyalgia without first demonstrating the reliability of the theory that trauma can cause it.

To illustrate with an extreme example: a patient suffering from depression sees a doctor because her arm hurts. She does not know why her arm hurts. The doctor diagnoses a broken arm. The patient cannot tell the doctor how she broke her arm. The doctor may, through performing tests and interviewing the patient, conclude that it could not have been a car accident (the patient was not involved in an accident) and it could not have been playing sports (the patient does not play sports), but the doctor cannot then conclude that it must have been the depression that caused the broken arm—unless, of course, the doctor can show that the theory that depression can cause a broken arm is generally accepted in the scientific community. Similarly, only if it is generally accepted that trauma is a potential cause of fibromyalgia may an expert testify that, through differential diagnosis, she has concluded that trauma caused this plaintiff's fibromyalgia. See, e.g., McClain,

401 F.3d at 1253 ("[A]n expert does not establish the reliability of his techniques or the validity of his conclusions simply by claiming that he performed a differential diagnosis on a patient."); Clausen v. M/V New Carissa, 339 F.3d 1049, 1057-58 (9th Cir. 2003) ("The first step in [a differential diagnosis] is to compile a comprehensive list of hypotheses . . . . The issue at this point in the process is which of the competing causes are generally capable of causing the patient's symptoms or mortality. Expert testimony that rules in a potential cause that is not so capable is unreliable.") (citation omitted); Food Lion, 171 F.3d at 314 (recognizing that the causes of fibromyalgia are unknown and "[a]bsent these critical scientific predicates . . . no scientifically reliable conclusion on causation can be drawn" such that the "use of a general methodology cannot vindicate a conclusion for which there is no underlying medical support"); Maras v. Avis Rent A Car Sys., Inc., 393 F. Supp. 2d 801, 809 (D. Minn. 2005) (noting that the plaintiff failed to demonstrate a proper basis for "ruling in" an accident as the cause of fibromyalgia and thus, use of differential diagnosis did not render the testimony admissible). Differential diagnosis is not a wild card that can be used to introduce novel scientific theories into the courtroom. Any other logic would revert us to the science of the Salem Witch Trials. See, e.g., Laurie Winn Carlson, A Fever in Salem xiv (1999) ("With the limited scientific and medical knowledge of the time, physicians who were consulted could only offer witchcraft as an

explanation."); cf. Carl Sagan, The Demon-Haunted World 26 (1995) ("Science is an attempt, largely successful, to understand the world, to get a grip on things, to get hold of ourselves, to steer a safe course. Microbiology and meteorology now explain what only a few centuries ago was considered sufficient cause to burn women to death.").

II. THE TESTIMONY FAILS TO SATISFY FRYE

Having determined that testimony causally connecting trauma to fibromyalgia is subject to the Frye test, the next question I address is whether the evidence in this case satisfied the test. I conclude that the answer is "no." Frye requires the proponent to show general acceptance by a "clear majority" of the members of the relevant scientific community. See, e.g., Brim, 695 So. 2d at 272; Hadden, 690 So. 2d at 576 n.2. The majority here concludes that testimony causally linking trauma to fibromyalgia is admissible because some experts recognize an association between the two. Majority op. at 13. I cannot agree that such evidence satisfies Frye. As explained below, a review of the materials presented to the trial court, district court, and this Court, as well as opinions from other jurisdictions, demonstrate an ongoing debate on the issue of whether trauma can cause fibromyalgia. See, e.g., Ramirez, 810 So. 2d at 844 (recognizing that a court may consider "expert testimony, scientific and legal publications, and judicial opinions" in determining whether a theory has been "'sufficiently tested

and accepted by the relevant scientific community'") (quoting Brim, 695 So. 2d at 272). No clear majority has emerged—either way. Therefore, Marsh, as the proponent of the evidence, has failed to meet her burden.

The record in this case contains a large amount of material. However, the parties focused on six documents—three "consensus reports"—Frederick Wolfe et al., The Fibromyalgia Syndrome: A Consensus Report on Fibromyalgia and Disability, 23 J. Rheumatology 534 (1996) [hereinafter Consensus Report]; Muhammad B. Yunus et al., Fibromyalgia Consensus Report: Additional Comments, 3 J. Clinical Rheumatology 324 (1997) [hereinafter Additional Comments]; and Anil Kumar Jain et al., Fibromyalgia Syndrome: Canadian Clinical Working Case Definition, Diagnostic and Treatment Protocols—A Consensus Document, 11 J. Musculoskeletal Pain 3 (2003) [hereinafter 2003 Consensus Document]—and three studies (Dan Buskila et al., Increased Rates of Fibromyalgia Following Cervical Spine Injury, 40 Arthritis & Rheumatism 446 (1997) [hereinafter Buskila study]; A.W. Al-Allaf et al., A Case-Control Study Examining the Role of Physical Trauma in the Onset of Fibromyalgia Syndrome, 41 Rheumatology 450 (2002) [hereinafter Al-Allaf study]; and Moshe Tishler et al., Neck Injury and Fibromyalgia—Are They Really Associated?, 33 J. Rheumatology 1183 (2006) [hereinafter Tishler study]). I address these documents below, along with others.

The Consensus Report, supra, at 534, resulted from a 1994 conference of fibromyalgia experts. It specifically addresses the connection between trauma and fibromyalgia:

> Evidence that trauma can cause FM, a potential (or It Can) causal proposition, comes from a few case series or case reports and is insufficient to establish causal relationships. That trauma might cause FM sometimes, a predictive (or It Will) causal proposition, can only be addressed by epidemiological studies that measure the risk of potential exposures on the development of FM. Epidemiologic studies of trauma and FM needed to address potential or predictive causality are currently not available. . . .
>
> Overall, then, data from the literature are insufficient to indicate whether causal relationships exist between trauma and FM. The absence of evidence, however, does not mean that causality does not exist, rather that appropriate studies have not been performed.

Id. at 534-35 (footnotes omitted) (emphasis added). In response to the Consensus Report, another group published the Additional Comments, supra. The authors recognized that "[o]ur scientific understanding of FMS is still very limited." Id. at 324. However, with regard to causality, they disagreed with the Consensus Report, stating, "[I]t seems more than 51% likely that trauma does play a causative role in some FMS patients." Id. at 325.[7]

Later, another group published the 2003 Consensus Document, supra, which was primarily a summary of previous research. The 2003 Consensus Document

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7. The focus of this statement is on the causal probability rather than the general acceptance of the causal theory—the relevant inquiry under Frye. However, the point seems to be that these experts believe trauma can cause fibromyalgia.

recognizes that no known cause of fibromyalgia exists, but reviews numerous studies to conclude that "[t]here is strong consistency in documentation that physical trauma such as a fall or motor vehicle accident, particularly a whiplash or spinal injury, can trigger FMS in some patients." Id. at 44. The authors recognize, however, that further research on "[t]he etiology of FMS including genetic components and prodomal events such as physical trauma" is needed. Id. at 61.

Although not a "consensus" report, another recent document surveys physician opinions about the association between trauma and fibromyalgia. See Kevin P. White et al., Perspectives on Posttraumatic Fibromyalgia: A Random Survey of Canadian General Practitioners, Orthopedists, Physiatrists, and Rheumatologists, 27 J. Rheumatology 790, 794 (2000) [hereinafter White survey]. The authors randomly surveyed Canadian physicians to determine which factors were deemed most important in an individual with widespread pain following a motor vehicle trauma. Id. at 791. They found that the physicians surveyed "were reluctant to ascribe primary responsibility for chronic widespread pain to the trauma itself." Id. at 794.

If these documents demonstrate anything, it is the lack of consensus on the issue, and therefore the lack of general acceptance of the theory that trauma can cause fibromyalgia. The very fact that competing "consensus reports" exist, with

experts on each side, demonstrates the lack of general acceptance by a "clear majority" of members of the community.

As the majority notes, see majority op. at 13, some articles do suggest an association between trauma and fibromyalgia. But most of them are case reports and anecdotal accounts.[8] I recognize that to satisfy Frye epidemiological studies confirming a causal theory are not always required, see, e.g., Castillo, 854 So. 2d at 1270; U.S. Sugar, 823 So. 2d at 110, but if a majority of experts agrees about anything, it is that (1) the cause of fibromyalgia is unknown,[9] and (2) to determine the relationship between fibromyalgia and trauma, more studies are needed.[10]

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8. See, e.g., Samuel A. McLean et al., Fibromyalgia After Motor Vehicle Collision: Evidence and Implications, 6 Traffic Injury Prevention 97, 97, 99 (2005) (recognizing a "plethora" of case reports and anecdotal accounts of fibromyalgia in close temporal association with trauma, but only one case-controlled study—the Buskila study—directly examining the relationship); Yoram Shir et al., Whiplash and Fibromyalgia: An Ever-Widening Gap, 33 J. of Rheumatology 1045, 1046 (2006) (noting that the link with trauma has been mostly based on patient report and retrospective studies); John B. Winfield, Pain in Fibromyalgia, 25 Pain Management in the Rheumatic Diseases 55, 63 (1999) ("The argument in favor of a connection between trauma and fibromyalgia is based on the experience of certain clinicians that trauma and fibromyalgia are associated . . . .").

9. See, e.g., Dan Buskila & Lily Neumann, Musculoskeletal Injury as a Trigger for Fibromyalgia/Posttraumatic Fibromyalgia, 2 Current Rheumatology Reports 104, 104 (2000) ("[T]he etiology and pathophysiology of FM are still unclear."); 2003 Consensus Document, supra, at 43-44 (recognizing that "[t]here is no known single initiating cause" of fibromyalgia); Roland Staud, Fibromyalgia Pain: Do We Know the Source?, 16 Current Opinion in Rheumatology 157, 157 (2004) ("Fibromyalgia syndrome is a chronic pain syndrome of unknown etiology . . . ."); Tishler study, supra, at 1183 ("The etiology and pathophysiology of this disorder remain unclear . . . ."); Consensus Report, supra, at 536 ("The

The parties primarily rely on three such studies: (1) the Buskila study; (2) the Al-Allaf study; and (3) the Tishler study. All three of these studies conclude that more research is needed to determine whether trauma causes fibromyalgia. The authors of the Buskila study, supra at 446, which was published in 1997, studied the relationship between cervical spine injury and the development of fibromyalgia. They recognized that to date the evidence that trauma can cause fibromyalgia had been "equivocal" and "from a few case series or case

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cause(s) of FM are incompletely understood."). The Petitioner likewise recognizes that "the precise etiology and exact pathological mechanisms are not fully understood."

10. See, e.g., Buskila & Neumann, supra, at 107 ("Future research needs to be directed to prospective longitudinal evaluation of patients who fall victim to motor vehicle or industrial accidents to determine the natural history of postaccident FM."); 2003 Consensus Document, supra, at 61 (recognizing that further research is "obviously needed" on the "etiology of FMS," including the link to trauma); McLean et al., supra, at 99, 101 (stating that further case-control studies are needed to "more firmly establish causation"); Shir et al., supra, at 1046 ("The debate . . . is not completely settled for an association of a triggering event and the onset of FM, but requires further study in order to reach a final conclusion."); Staud, supra, at 159 ("Further prospective studies, however, are needed to confirm this association and to identify whether trauma plays a causal role for FMS pain."); George W. Waylonis & Robert H. Perkins, Post-Traumatic Fibromyalgia: A Long-Term Follow-Up, 73 Am. J. of Physical Med. & Rehabilitation 403, 403 (1994) (recognizing that "literature investigating post-traumatic fibromyalgia is quite limited"); Kevin P. White et al., Trauma and Fibromyalgia: Is There an Association and What Does It Mean?, 29 Seminars in Arthritis & Rheumatism 200, 201, 209 (2000) (stating "there is limited evidence either to support or refute an association between trauma and FM" and that further studies are needed); Consensus Report, supra, at 534 ("Epidemiologic studies of trauma and FM needed to address potential or predictive causality are currently not available.").

reports . . . insufficient to establish causal relationships." Id. (footnotes omitted). They studied two groups of Israeli patients who visited an occupational clinic: (1) those with neck injuries (102 patients); and (2) those with leg fractures (fifty-nine patients). Id. at 447. The researchers found that twenty-two of the patients with neck injuries, and only one of the patients with a leg fracture, developed fibromyalgia. Id. at 449. The article concludes that "[t]he present data in the literature are insufficient to indicate whether causal relationships exist between trauma and FMS. Our study, however, suggests that soft tissue trauma to the neck can result in an increased incidence of FMS compared with other injuries." Id. at 451.

Despite this conclusion, a later article by two of the same authors states:

> Traumatic incidents have been suggested as a possible etiologic factor relating to the onset of FM. However, evidence that musculoskeletal injury or trauma can cause FM comes from a few case series or anecdotal case reports. Reviewing the current literature reveals that data are insufficient to indicate whether causal relationships exist between trauma and FM.

Buskila & Neumann, supra, at 107 (emphasis added).

Another study examining "whether physical trauma precipitates the onset of fibromyalgia" is the Al-Allaf study, supra, at 451, a retrospective study based on patient recall. The researchers found that 39% of the fibromyalgia patients reported a history of trauma, compared with 24% of the control subjects,

suggesting "that physical trauma was significantly associated with the onset of FMS." Id. at 452. However, they cautioned:

> Our own results are, of course, retrospective and may be influenced by recall bias, but if they are confirmed in a prospective study this would lead us to speculate on the mechanisms by which trauma might preciptitate FMS.
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> . . . .
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> In conclusion, our study suggests that physical trauma in the 6 months before the onset of symptoms is significantly associated with the onset of FMS in patients attending a rheumatology out-patient clinic. Further prospective studies are needed to confirm this association and to determine whether trauma has a causal role or if there are more important factors in the development of FMS.

Id. at 453 (emphasis added).

Thus, both the Buskila study and Al-Allaf study suggest an association between trauma and fibromyalgia. However, they also indicate that before a causal connection can be found, more research is needed. It has been noted that a call for further research does not necessarily indicate uncertainty, and that the purpose of a study is not to fix a cause but to "assess the existence and strength or absence of an association between an agent and a disease." Berry v. CSX Transp., Inc., 709 So. 2d 552, 567, 568 n.12 (Fla. 1st DCA 1998). In this case, however, despite finding an association between trauma and fibromyalgia, the authors specifically recognized that insufficient data existed to find a causal relationship.

The majority nevertheless deems the studies finding a mere association between trauma and fibromyalgia sufficient to satisfy Frye. Majority op. at 13.

Yet a recent study, the Tishler study, supra, at 1183—a prospective study published in 2006—suggests the absence of even that. The Tishler study involved 153 car accident patients who had been discharged from the emergency room with a whiplash injury, and a control group of forty-eight car accident patients hospitalized because of severe trauma. Id. The researchers found:

> The issue of trauma and FM remains controversial. . . . Several studies in the past, most of them retrospective, have reported that up to 50% of patients with FM can recall an event, most often physical trauma, that immediately preceded their symptoms. An extensive review of the literature failed to yield solid conclusions concerning this issue. The only prospective study that found a causative link between trauma and FM is by Buskila, et al. In this study, which was not followed by others, the authors found that 21.6% of patients with neck injury developed FM shortly after a work accident. These data are impressive since in their control group of patients with leg fractures, the rate of FM was much lower . . . . We could not confirm these earlier findings; after a mean followup of 14.5 months, only one out of 153 patients with whiplash injury developed FM.
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> . . . .
>
> In conclusion, the results of our prospective study do not support earlier observations about a link between neck trauma and FM.

Id. at 1184-85 (footnotes omitted) (emphasis added); see also, Shir et al., supra, at 1046 ("We now have a single, but large and well designed prospective study with a surprising conclusion. . . . Tishler's conclusion should be upheld.").

Let me be clear: I do not argue that these studies demonstrate that trauma does not cause fibromyalgia. My point is that no clear majority exists either way. Instead, the scientific community is in the middle of an ongoing and intense

debate. See, e.g., Shir et al., supra, at 1045 ("Opinions regarding an association between trauma such as whiplash injury (WLI) and subsequent FM are emotionally charged and highly polarized."); McLean et al., supra, at 97 ("The ability of physical trauma . . . to trigger the development of FM remains the subject of intense debate."); White survey, supra, at 790 ("There may be no issue more contentious in FM than the causative role of trauma."); Winfield, supra, at 62-63 (recognizing that "[t]rauma as a 'trigger' or cause of fibromyalgia is an important and contentious issue in modern American society" and that "[d]ebate, which actually has raged for much of this century, continues") (footnotes omitted). The very existence of this debate precludes Marsh from satisfying the requirement that this novel scientific principle be generally accepted. See, e.g., Castillo, 854 So. 2d at 1268 ("The proponent of the evidence bears the burden of establishing by a preponderance of the evidence the general acceptance of the underlying scientific principles and methodology.").

My conclusion is consistent with cases from other jurisdictions considering this precise issue under both Frye and Daubert (or a Daubert-type analysis). See, e.g., Vargas v. Lee, 317 F.3d 498, 502-03 (5th Cir. 2003) (applying Daubert and excluding testimony that a car accident caused fibromyalgia); Food Lion, 171 F.3d at 314 (applying Daubert and finding testimony linking a slip-and-fall to fibromyalgia inadmissible); Maras, 393 F. Supp. 2d at 808-10 (finding testimony

that motor vehicle accident caused fibromyalgia failed to meet the general acceptance factor, among other factors, of Daubert); Hultberg v. Wal-Mart Stores, Inc., No. CIV. A. 97-2858, 1999 WL 244030, at *1 (E.D. La. Apr. 22, 1999) (applying Daubert and excluding testimony that a slip-and-fall accident caused fibromyalgia); Schofield v. Laboscam, Inc., No. CIV. A. CV-00-197, 2002 WL 1335867, at *3 (Me. Super. Ct. June 6, 2002) (granting motion in limine to exclude testimony that a vehicle accident caused fibromyalgia); Jones v. Conrad, No. CA2000-12-257, 2001 WL 1001083, at *3-4 (Ohio Ct. App. Sept. 4, 2001) (finding testimony linking work accident to fibromyalgia inadmissible and the theory that trauma can cause fibromyalgia not generally accepted); Grant v. Boccia, 137 P.3d 20, 24 (Wash. Ct. App. 2006) (citing with approval the district court's decision in Marsh and holding inadmissible under Frye testimony linking a car accident to fibromyalgia where "[n]one of the authorities presented by either party has the effect of persuasively establishing acceptance in the relevant community as to the cause of fibromyalgia or the causal role of trauma in the development of fibromyalgia"), review denied, 154 P.3d 919 (Wash. 2007); cf. Washburn v. Merck & Co., 213 F.3d 627, 2000 WL 528649, at *2 (2d Cir. May 1, 2000) (No. 99-9121) (affirming exclusion of testimony that vaccination caused fibromyalgia and other conditions under Daubert because it was based "on little more than temporal correlation" between the vaccination and onset of symptoms);

Allison v. McGhan Med. Corp., 184 F.3d 1300, 1321-22 (11th Cir. 1999) (affirming exclusion of testimony that breast implants caused fibromyalgia); Wynacht v. Beckman Instruments, Inc., 113 F. Supp. 2d 1205, 1209 (E.D. Tenn. 2000) (finding testimony linking a chemical spill to fibromyalgia and other conditions inadmissible under Daubert); Gross v. King David Bistro, Inc., 83 F. Supp. 2d 597, 602 (D. Md. 2000) (granting motion in limine to preclude testimony under Daubert that shigella infection caused fibromyalgia); Bushore v. Dow Corning-Wright Corp., No. 92-344-CIV-T-26C, 1999 WL 1116920, at *1 (M.D. Fla. Nov. 15, 1999) (applying Daubert and excluding testimony that breast implants caused fibromyalgia); Minner v. Am. Mortgage & Guar. Co., 791 A.2d 826, 855 (Del. Super. Ct. 2000) (excluding evidence that a "sick building" caused fibromyalgia because "there appears to be a consensus that there is no known cause of FM").

I recognize that a few courts applying Daubert have admitted testimony causally linking trauma to fibromyalgia. See, e.g., Epp v. Lauby, 715 N.W.2d 501, 509-11 (Neb. 2006) (recognizing a "professional controversy regarding the causal relationship between physical trauma and fibromyalgia" and that "there is not a sufficient scientific consensus to say that the theory is generally accepted," but noting that general acceptance is not determinative under Daubert and finding admissible testimony causally linking plaintiff's car accident to fibromyalgia);

Reichert v. Phipps, 84 P.3d 353, 364-65 (Wyo. 2004) (finding causation testimony admissible because differential diagnosis is an acceptable method of diagnosing fibromyalgia and because the proffered expert opinions "were given in the overall context of a professional controversy over the link between physical trauma and FM, in which some experts take the position that there is, indeed, a causal connection"); cf. Adler v. Bayer Corp., 61 P.3d 1068, 1085 (Utah 2002) (holding admissible testimony linking chemical fumes to fibromyalgia where it was based on differential diagnosis). These are in the minority, however, and they apply a different test. Other than the Second District's recent decision in Johnson, 880 So. 2d at 721, however, I have found only one case applying a Frye-type test to testimony linking trauma to fibromyalgia that has found the testimony admissible. See Byrum v. Superior Court of Los Angeles County, No. B153001, 2002 WL 243565, at *2 (Cal. Ct. App. Feb. 20, 2002). Even that case seems to conflict with another case within the same appellate district. See Pflum v. Sears, Roebuck & Co., No. B161862, 2004 WL 348783, at *2 (Cal. Ct. App. Feb. 25, 2004) (concluding the issue was not preserved, but addressing the merits and finding a lack of "a reasonable degree of medical certainty that trauma can exacerbate fibromyalgia").

III. CONCLUSION

For the reasons stated, I would hold that expert testimony causally linking trauma to fibromyalgia is subject to, and fails, the Frye test. Our precedent dictates that this underlying scientific principle of causation is subject to the Frye test. Whether trauma can ever cause fibromyalgia is a subject of much debate, and therefore the view that it can has not been generally accepted. I cannot agree with the majority that the jury should be left to sort out contentious and complex disputes about medical causation where experts in the relevant scientific community have been unable to agree. See Brim, 695 So. 2d at 272 ("[W]e have expressly held that the trial judge must treat new or novel scientific evidence as a matter of admissibility (for the judge) rather than a matter of weight (for the jury)."); Ramirez, 651 So. 2d at 1168 (recognizing that "[t]he trial judge has the sole responsibility to determine" "the general acceptance of both the underlying scientific principle and the testing procedures used to apply that principle to the facts at hand"). Contrary to our admonition in Stokes, 548 So. 2d at 193-94 ("[A] courtroom is not a laboratory . . . . If the scientific community considers a procedure or process unreliable for its own purposes, then the procedures must be considered less reliable for courtroom use."), the majority decision turns the courtroom into a laboratory. For these reasons, I respectfully dissent.

WELLS and BELL, JJ., concur.

Application for Review of the Decision of the District Court of Appeal - Certified Direct Conflict of Decisions

Fifth District - Case No. 5D03-188

(Orange County)

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