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IN THE SUPREME COURT OF NORTH CAROLINA

No. 383PA03

FILED: 25 JUNE 2004

W. BRUCE HOWERTON, JR., DDS

v.

ARAI HELMET, LTD., a Japanese Corporation; ARAI HELMET, LTD., a New Jersey Corporation; and TOM BRISSEY

On discretionary review pursuant to N.C.G.S. § 7A-31 of a unanimous decision of the Court of Appeals, 158 N.C. App. 316, 581 S.E.2d 816 (2003), affirming an order for summary judgment entered 1 March 2002 by Judge Wade Barber in Superior Court, Orange County. Heard in the Supreme Court 17 February 2004.

Womble Carlyle Sandridge & Rice, PLLC, by Burley B. Mitchell, Jr., Richard T. Rice, and Alison R. Bost, for plaintiff-appellant.

Ellis & Winters LLP, by Richard W. Ellis, Matthew W. Sawchak, and Andrew S. Chamberlin; and Wilson Elser Moskowitz Edelman & Dicker, by James C. Ughetta, pro hac vice, for defendants-appellees.

Jeff Hunt on behalf of the North Carolina Conference for District Attorneys, amicus curiae.

Twiggs, Beskind, Strickland & Rabenau, P.A., by Howard F. Twiggs, Donald H. Beskind, and Jerome P. Trehy, Jr.; and Robert P. Mosteller, on behalf of the North Carolina Academy of Trial Lawyers, amicus curiae.

Nelson Mullins Riley & Scarborough, L.L.P., by George Major Teague; Robinson, Bradshaw & Hinson, P.A., by John Robbins Wester and Scott William Gaylord; and Bailey & Dixon, L.L.P., by Gary S. Parsons, on behalf of the North Carolina Citizens for Business and Industry and the North Carolina Association of Defense Attorneys, amici curiae.

Smith Moore LLP, by J. Donald Cowan, Jr., and Dixie Wells, on behalf of the Product Liability Advisory Council, Inc., amicus curiae.

WAINWRIGHT, Justice.

On 5 October 1996, plaintiff, W. Bruce Howerton, Jr., D.D.S. (“Howerton”), suffered a devastating motorcycle accident while riding his off-road motorcycle at a motocross practice track in western North Carolina. Howerton was an experienced off-road motorcycle enthusiast who had been riding motorcycles since he was a child. He had owned numerous motorcycles throughout his life and was knowledgeable in the technical aspects of motorcycles and motorcycle equipment.

The motocross track on which Howerton rode the day of the accident was a winding dirt course with numerous jumps and obstacles. Howerton wore typical motocross safety gear, including

riding boots, knee braces, gloves, and an Arai “MX/a” motorcycle helmet. While jumping a course obstacle known as a “table top,” Howerton landed atop another motorcycle rider who had entered the landing area of the jump perpendicular to Howerton's line of travel. The two motorcycles became entangled on impact, causing Howerton's motorcycle to stop abruptly and launching Howerton into an airborne somersault over the handlebars of his motorcycle. Howerton landed upside down on the back of his helmeted head, breaking the chin guard attached to his helmet and forcing his chin downward into his chest. As he landed, Howerton experienced what he described as severe popping, crunching, and pain in his neck. Lying in the dirt, Howerton struggled to breathe and was unable to move his legs; he immediately recognized the severity of his injuries. Paramedics were summoned and Howerton was transported to the hospital by helicopter. As a result of his accident, Howerton sustained debilitating cervical vertebral fractures at the C5/C6 level that left him a quadriplegic, permanently paralyzed from the neck down.

On 4 October 1999, Howerton brought actions against the other motorcycle rider, the owners of the motocross track, and Arai Helmet, Ltd., [\(See footnote 1\)](#) the manufacturer of the motorcycle helmet Howerton was wearing when the accident occurred. Our review of this matter concerns only Howerton's claims against Arai.

Howerton's products liability claims against Arai set forth various theories of negligence and breach of implied and express warranties. Howerton alleged, among other things, that Arai negligently designed, manufactured, and promoted a helmet that was unreasonably dangerous under ordinary usage and that such negligence was the direct and proximate cause of his quadriplegia. Howerton further claimed that Arai breached both express and implied warranties by manufacturing a defective helmet and by failing to provide adequate warnings of its dangerous condition. On 13 August 2001, Howerton amended his complaint to include a claim that Arai intentionally engaged in a campaign to deceptively advertise and market the allegedly defective helmet, thereby engaging in an unfair and deceptive trade practice in violation of N.C.G.S. § 75-1.1.

The Arai “MX/a” helmet worn by Howerton on the day of his accident was equipped with a flexible, removable guard across the chin and mouth that was secured to the helmet on each side by nylon screws. By comparison, many other helmets are designed with a rigid, integral chin bar that is structurally molded into the helmet. In addition to protecting the motorcyclist's mouth and nose area from debris, some of these rigid guards are purportedly designed to increase the strength and stability of the motorcyclist's neck upon impact by preventing the neck from rotating too far forward. Such a chin guard limits the forward rotation of the head by stopping against the motorcyclist's chest, protecting the head and neck from extreme forward rotation. The purpose of the guard on the specific Arai “MX/a” helmet worn by Howerton on the day of his accident is subject to conflicting characterizations which lie at the heart of this litigation. Howerton complains that the chin guard on his Arai helmet should have restricted the movement of his neck like a rigid chin guard and cushioned his head on impact so as to prevent the

catastrophic spinal injury which he suffered. Howerton alleges that when the nylon screws securing the chin guard to his helmet broke on impact, his head was allowed to rotate too far forward, beyond its normal anatomical range, resulting in a “hyperflexion” of his neck which caused the resulting cervical fractures and paralysis. Howerton additionally claims that Arai's advertising and marketing led him to believe that the helmet provided superior neck protection, when in fact it did not, and that Arai failed to warn him that its chin guard would neither withstand nor protect against the physical forces Howerton experienced in his motorcycle accident.

According to Arai, however, “[t]he intended function of the mouth guard on the MX/a helmet is to prevent pebbles, dirt and small branches from contacting that part of the rider's face behind the mouth guard while riding off-road or in wooded areas.” Arai insists that its breakaway rock guard was never designed “to function as an integral part of a full face helmet and was never intended to offer the same degree of facial protection . . . in the full range of possible motorcycle accidents.” Rather, Arai contends that the chin guard on its helmet was intentionally designed to bend or break away on impact so as to minimize excessive and dangerous torquing of the neck. To prove the alleged defectiveness of his Arai helmet and its causal connection to his injuries, Howerton offered the opinion testimony of four key expert witnesses:

(1) Professor Hugh H. Hurt, Jr. is an expert in motorcycle accidents and motorcycle helmets. Professor Hurt is President of the Head Protection Research Laboratory of Southern California and Professor Emeritus of Safety Science at the University of Southern California. Professor Hurt has researched and published extensively in the field of motorcycle accidents and motorcycle helmet safety for more than twenty-five years. Based upon Professor Hurt's extensive credentials, Arai stipulated that he is qualified as an expert pursuant to North Carolina Rule of Evidence 702. Professor Hurt's opinion was that the flexible chin guard on Howerton's Arai helmet was defectively designed and manufactured such that it broke loose on impact and failed to limit the forward rotation of Howerton's head. Instead of stopping the chin against the sternum, as a rigid chin guard would do, Professor Hurt opined that the flexible chin guard on Howerton's Arai helmet broke on impact, allowing Howerton's neck to flex towards the chest, beyond its normal range of movement. Finding the chin guard on the Arai helmet to be “flexible and weak,” Professor Hurt was further of the opinion that the Arai helmet's apparent similarity to other motorcycle helmets with structurally rigid chin guards created a “misleading and dangerous” “illusion of protection.”

(2) William C. Hutton, D.Sc. is an expert in biomechanics and orthopaedic biomechanics. Dr. Hutton is Professor and Director of Orthopaedic Research at Emory University School of Medicine. He is widely published and has over thirty-five years of experience in the fields of biomechanics, orthopedic research, and spinal injuries. Dr. Hutton's opinion was that the flexible chin guard on Howerton's Arai helmet broke and allowed Howerton's head and neck to travel beyond their normal range of motion, causing the hyperflexion and compression that resulted in Howerton's paralysis.

(3) James Randolph Hooper is an expert in the design and manufacture of composite materials such as those found in motorcycle helmets. Hooper worked as a design engineer on the development of other full-face, off-road motorcycle helmets and is personally experienced with off-road motorcycles and motorcycle accidents. Hooper's opinion was that the flexible chin guard on Howerton's Arai helmet offered no protection on impact and, in fact, created a considerable hazard due to its flexible nature. Hooper further opined that the chin guard on Howerton's Arai helmet was known to detach on impact and lacked the protective features typical of helmets with rigid chin guards.

(4) Charles Edward Rawlings, III, M.D. is a board certified neurosurgeon. With more than ten years of neurosurgical experience, Dr. Rawlings has conducted numerous spinal surgeries on patients with cervical fractures similar to the one sustained by Howerton. Although Dr. Rawlings was not Howerton's treating neurosurgeon, Dr. Rawlings reviewed Howerton's medical records and opined that Howerton suffered a flexion-compression injury that was the cause of his paralysis.

On 7 January 2002, Arai filed its "Omnibus Motion for Summary Judgment on All Claims and Motion to Exclude Testimony of Plaintiff's Experts on the Issue of Causation." In this motion, Arai argued that:

Plaintiff must prove that his injuries were caused by the product at issue. In this complex product liability case, Plaintiff cannot meet this burden absent admissible expert testimony on the issue of causation. Four of Plaintiff's experts, Dr. Charles Rawlings, Dr. William Hutton, Mr. Hugh H. Hurt and Mr. Randolph Hooper, have attempted to offer expert opinion testimony supporting Plaintiff's case on this issue [of causation]. None of these experts have performed testing relevant to the causation issues in this case. None have undertaken independent research to support their hypotheses or subjected their hypotheses to peer-review via publication. Each has relied on inadequate or non-existent data that renders their opinions subject to an unreasonably high rate of error. Finally, none of these expert[s] have been able to demonstrate that their opinions are generally accepted within their own fields. In fact, many of the opinions expressed by these experts are contrary to the existing body of medical or biomechanical research. In some cases, the opinions expressed by these experts are in conflict with one another, or in conflict with their own previously published opinions. Accordingly, the Arai Defendants move that the opinions of Plaintiff's experts be held inadmissible at trial pursuant to Rule 104 and Rule 702 of the North Carolina Rules of Evidence and the related authorities of the North Carolina courts and United States Supreme Court. Further, that the Court award the Arai Defendants summary judgment on all claims based on the inability of Plaintiff to offer admissible evidence of causation. On 29 January 2002, the trial court conducted a brief hearing on the matter, considering arguments from counsel, discovery materials, and pleadings. The trial court did not, however, hear live voir dire testimony from the experts.

On 1 March 2002, the trial court granted Arai's motion to exclude the testimony of Howerton's

experts on the issue of causation. With respect to each of Howerton's four experts, the trial court made the following findings of fact:

Professor Hugh H. Hurt, Jr.

16. Professor Hugh Hurt is a helmet expert from California. He opined that a full-face helmet equipped with an integrated chin bar would have prevented plaintiff's injury.

17. Professor Hurt's opinion was based on the assertion that he had noticed red "u" or "v" shaped marks on the chests of three motorcycle riders who were involved in motorcycle accidents while wearing full-face helmets. The necks of the three riders were not broken, however, two of these riders were killed in the accidents at issue. Professor Hurt deduced that these marks were caused by the rigid integrated chin bars on the riders' full-face helmets striking their chests during the accident, and concluded that this may have prevented a neck injury.

18. Professor Hurt explained the basis of his opinion that the marks on the chests of three riders proves that rigid chin bars prevent neck injuries as follows: "like Bo knows baseball, Hurt knows motorcycle accidents."

19. Professor Hurt could not quantify the extent to which a full-face helmet would prevent forward flexion of the head and neck.

20. Professor Hurt did not test or perform independent research on his hypothesis that full-face helmets equipped with rigid chin bars prevent neck injuries. He did not subject his hypothesis to peer review by publishing it to his peers.

21. Professor Hurt did not report his hypothesis to the United States government, for whom he conducted extensive studies that included work on motorcycle helmet safety.

22. Professor Hurt was not able to identify any published work by any author that expressly supported his hypothesis and, thus, did not present any evidence other than his unsupported assertions that his hypothesis is generally accepted in his field.

23. Indeed, Professor Hurt's published work did not support -- and in fact tends to contradict -- his hypothesis that full-face helmets prevent neck injuries. In a University of Southern California report published in 1981, Professor Hurt published data indicating that serious neck injuries occurred more frequently in riders wearing full-face helmets than in riders wearing full coverage helmets (i.e., open-face helmets that were not equipped with chin bars.).

24. Professor Hurt also opined that the MX/a design provided superior head protection, and that open-face helmets, that is, helmets without chin bars, are not defective.

25. Professor Hurt's opinion that a full-face helmet would have prevented plaintiff's injury is speculative and based on inadequate data.

26. Professor Hurt's opinion that a full-face helmet would have prevented plaintiff's injury is not reliable. Professor Hurt's opinion was not developed through sound scientific or engineering methods. Professor Hurt has not performed relevant testing or independent research and has not subjected his hypothesis that full face helmets prevent neck injuries to peer-review by publishing that claim. Further, he was unable to demonstrate that his hypothesis is generally accepted in his field by pointing to any published support for his claim. Finally, to the extent that his methods represent a technique, it is clear that this technique is subject to an unacceptably high risk of error.

James Randolph Hooper

27. Mr. Randolph Hooper was proffered by plaintiff as an expert based on his role in the design and manufacture of a motorcycle helmet in the late 1970's and early 1980's. Like Professor Hurt, Mr. Hooper also opined that a full-face helmet with integrated chin bar would have prevented plaintiff's injury.

28. Mr. Hooper is not a medical doctor, an accident reconstructionist, an expert in biomechanics, or an engineer. He does not have a college degree.

29. When deposed, Mr. Hooper expressly conceded that he did not have the expertise to opine that a full-face helmet equipped [with] an integrated chin bar would have prevented plaintiff's injury.

30. Nevertheless, Mr. Hooper was willing to testify about his own history of motorcycle accidents involving full-face helmets for the apparent purpose of supporting the inference that a full-face helmet would have prevented plaintiff's injury.

31. However, Mr. Hooper was admittedly unaware of the salient details of plaintiff's accident. In addition, he was unable to relate the specific details of his own accidents.

32. Mr. Hooper is not qualified to offer the opinion that a full-face helmet would have prevented plaintiff's injury in this case. His opinion that a full-face helmet would have prevented plaintiff[s] injury was speculative and based on inadequate data. Further, Mr. Hooper did not have a reliable basis to offer any meaningful comparison between his own history of accidents and plaintiff's accident.

Dr. Charles Rawlings

33. Dr. Charles Rawlings is a neurosurgeon. Dr. Rawlings currently is attending law school and has not actively practiced neurosurgery on a full time basis since at least January of 2000.

34. Dr. Rawlings has never performed independent research or testing on the mechanisms of cervical fractures. He has never published any medical article on the mechanisms of cervical fracture. He has never published on hyperflexion neck injuries.

35. Dr. Rawlings opined that plaintiff suffered no injuries, including his paralysis, prior to the time his head rotated forward beyond the normal range of motion.

36. When deposed Dr. Rawlings admitted that the medical literature does identify a “hyperflexion” injury of the cervical spine. Dr. Rawlings conceded that the hallmark features of hyperflexion injuries include bilateral or unilateral locked facets. He further conceded that plaintiff’s injury did not involve bilateral or unilateral locked facets.

37. Due to the absence of these features, Dr. Rawlings defined plaintiff’s injury as a flexion-compression injury. Dr. Rawlings nevertheless opined that eighty percent of all compression-flexion injuries involve hyperflexion. However, Dr. Rawlings was unable to identify any published medical literature that supports this claim.

38. Dr. Rawlings never examined plaintiff and reviewed only a selected portion of his medical records. Although Dr. Rawlings offered opinions based on efforts to compare plaintiff’s accident to the accidents experienced by patients in his practice, he did not have adequate data to make such a comparison. To the extent that this represented a medical technique, if at all, it incorporated an unacceptably high potential for error.

39. Dr. Rawlings also opined based on plaintiff’s radiology films that plaintiff’s head rotated ten to twenty degrees beyond his normal anatomical range. However, he conceded that he has never published his claimed ability to draw such conclusions from radiology films. Nor could he cite any published authority supporting the conclusion that such an estimate can be accurately derived from medical records or radiology films. Dr. Rawlings further testified that a body of scientific literature may exist that addresses head rotation with respect to neck injury, but conceded that he had made no effort to research this literature.

40. Dr. Rawlings made no attempt to validate his hypothesis that plaintiff’s head rotated ten to twenty degrees beyond his normal anatomical range. He could not point to any tests, measurements or literature supporting his opinion on this point.

41. Dr. Rawlings was unable to offer any medically reliable opinion on the extent to which plaintiff’s head may have been rotated forward at impact. He conceded that unless the amount of force is known, it is impossible to distinguish one degree and forty-five degrees of flexion based on radiology films. Dr. Rawlings conceded that he did not know the amount of force involved in this accident. Dr. Rawlings acknowledged that he had no medical basis to opine about whether plaintiff’s head was rotated forward in flexion five degrees or forty-five degrees at impact.

42. Even though he did not know the force involved in the accident and could not accurately identify the position of plaintiff’s head at impact, Dr. Rawlings opined that plaintiff would not have been paralyzed but for his head rotating forward beyond the normal anatomical range of motion. He admitted, however, that there are no objective criteria that can be used to confirm this hypothesis. Nor could he point to any medical literature indicating that it is possible to state

whether a particular patient would be paralyzed based on a given set of variables.

43. Dr. Rawlings opined that plaintiff experienced an anterior teardrop fracture of C5 and that this feature was indicative of a hyperflexion mechanism. This opinion was generally inconsistent with the testimony of the treating neurosurgeon who used the anterior face of C5 as a site to attach a metal plate to fuse plaintiff's vertebra and was in a superior position to judge its condition. Dr. Rawlings' claim that C5 was the only possible source of the bone fragment at issue is contrary to the report of the attending radiologist. In any event, the Arai defendants presented evidence that even if a teardrop fracture occurred, fractures of this type are not specific to hyperflexion injury mechanisms.

44. Dr. Rawlings' opinion that plaintiff's injury was caused by hyperflexion is speculative and based on inadequate data.

45. Dr. Rawlings' opinion that plaintiff's injury was caused by hyperflexion is not reliable. Dr. Rawlings' opinion was not based on sound scientific or medical methods. He has not performed independent research or testing on cervical injury mechanisms or on hyperflexion. He has never subjected his related hypotheses to peer-review by publication. Moreover, the hypotheses underlying Dr. Rawlings' opinion are not generally accepted. Finally, to the extent that his methods represent a technique, it is clear that his potential for error is inappropriately high.

Dr. William Hutton

46. Dr. William Hutton was proffered as an expert in the field of biomechanics. He is not a medical doctor.

47. Dr. Hutton opined, among other things, that at some point after the initiation of the fracture of plaintiff's neck, his head and neck moved forward beyond the normal range of motion. He further opined that this hyperflexion caused the bone fragments to be retropulsed further into the spinal canal.

48. Dr. Hutton conceded, however, that he has never researched, tested or published his hypothesis that the degree of retropulsion of bone fragments is a function of the degree of flexion or hyperflexion involved. He could cite no medical or scientific literature in support of this position. Dr. Hutton also conceded that retropulsion of bone fragments can occur in the absence of hyperflexion. Further, he acknowledged that plaintiff could have sustained some degree of retropulsion even if he had been wearing a full-face helmet. Finally, he conceded that he does not know how much retropulsion the spinal cord can withstand before paralysis occurs.

49. Dr. Hutton admitted that he had never dealt with a cervical injury similar to that experienced by plaintiff.

50. Dr. Hutton admitted that he could not identify any literature that supported the conclusion that plaintiff would not have been paralyzed but for hyperflexion.

51. Dr. Hutton's opinion that plaintiff's injuries were caused by hyperflexion is speculative and based on inadequate data.

52. Dr. Hutton's opinion that plaintiff's injuries were caused by hyperflexion is not reliable. Dr. Hutton has not researched or tested the hypotheses that he relies on in support of his opinion. He has not subjected these hypotheses to peer-review by publication. Nor has he demonstrated that these hypotheses are generally accepted in the field. To the extent that his methods represent a technique, it is clear that they incorporate an unacceptably high rate of error.

Based upon these findings of fact, the trial court excluded the testimony of all of Howerton's causation experts, ruling in relevant part that:

1. North Carolina has adopted *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993). See *State v. Goode*, 341 N.C. 513, 527, 461 S.E.2d 631, 639 (1995); see also *State v. Bates*, 140 N.C. App. 743, 748, 538 S.E.2d 597, 600 (2000).

2. Even before the issuance of the *Daubert* decision, North Carolina courts adopted “reliability” as the touchstone of admissibility for expert opinion testimony as demonstrated in *State v. Pennington*, 327 N.C. 89, 98, 393 S.E.2d 847, 852 (1990). The indicia of reliability identified by the North Carolina Supreme Court in *Pennington* are consistent with the indicia of reliability found in *Daubert*. The opinions expressed by plaintiff's experts fail under either analysis.

3. The inquiry of the Court is not limited to the qualifications of the experts. Implicit in Rule 702 of the North Carolina Rules of Evidence is the precondition that the matters or data upon which an expert bases his opinion be recognized in the scientific community as sufficiently reliable and relevant. *Davis v. City of Mebane*, 132 N.C. App. 500, 503, 512 S.E.2d 450, 452 (1999), *rev. dismissed as improvidently granted*, 351 N.C. 329, 524 S.E.2d 569 (2000). The test of reliability involves a preliminary assessment of whether the reasoning or methods at issue are sufficiently valid. *Goode*, 341 N.C. at 527, 461 S.E.2d at 639 (citing *Daubert*).

4. The Court, in its discretion, has concluded that Professor Hurt's opinion that a full-face helmet design would have prevented plaintiff's injury is unreliable and inadmissible.

5. The Court, in its discretion, has concluded that Mr. Hooper is not qualified to offer the opinion that a full-face helmet would have prevented plaintiff's injury. The Court further concludes that his opinion on this issue is based on inadequate data and is otherwise unreliable and inadmissible.

6. The Court, in its discretion, has concluded that Dr. Rawlings' opinion that plaintiff's injuries were caused by hyperflexion is unreliable and inadmissible.

7. The Court, in its discretion, has concluded that Dr. Hutton's opinion that plaintiff's injuries were caused by hyperflexion is unreliable and inadmissible.

8. After reviewing all of the relevant materials submitted by the parties, and based on the preceding findings of fact and conclusions of law, the Court, in its discretion, concludes that the above-cited opinions of Professor Hurt, Mr. Hooper, Dr. Rawlings and Dr. Hutton, should be excluded from the trial of this matter.

With the testimony of each of his causation experts excluded on the basis of the federal standard set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 125 L. Ed. 2d 469 (1993), Howerton was without any admissible evidence to establish a prima facie case that his injuries were caused by Arai's allegedly defective helmet. Thus, the trial court granted summary judgment in favor of Arai:

1. In its Order on Arai Defendants' Motion to Exclude the Testimony of Plaintiff's Experts, this Court, in its discretion, found that the opinion testimony of Dr. Charles Rawlings, Dr. William Hutton, Professor Hugh Hurt, and Mr. Randolph Hooper, offered on the issue of causation, is unreliable under the standards set out in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993), and/or *State v. Pennington*, 327 N.C. 89, 393 S.E.2d 847 (1990). As a result, this Court found that the opinion testimony of the above witnesses is inadmissible. In the absence of reliable expert opinion testimony on the issue of causation, the Court finds that plaintiff has failed to offer evidence sufficient to raise a material issue of disputed fact as to the element of causation. On that basis, the Arai defendants are entitled to judgment as a matter of law on all claims, and accordingly their motion for summary judgment is hereby GRANTED.

Additionally, the trial court granted Arai's motion for summary judgment with respect to Howerton's claim of unfair and deceptive trade practices and granted Arai's motion for summary judgment with respect to Howerton's claim that Arai failed to adopt a safer, feasible design alternative as required under N.C.G.S. § 99B-6, which sets forth statutory guidelines for products liability claims based on inadequate design or formulation.

On 5 March 2002, Howerton gave Notice of Appeal to the North Carolina Court of Appeals, arguing, among other things, that: (1) the trial court erred in its reliance upon and application of *Daubert* to exclude the expert testimony advanced by Howerton; (2) the trial court erred by concluding that Howerton's unfair and deceptive trade practices claim failed as a matter of law; and (3) the trial court erred by concluding that Howerton presented insufficient evidence to establish a prima facie claim that Arai unreasonably failed to adopt a safer, feasible design alternative. The North Carolina Court of Appeals rejected all of Howerton's assignments of error and affirmed the order of the trial court in its entirety. *Howerton v. Arai Helmet, Ltd.*, 158 N.C. App. 316, 581 S.E.2d 816 (2003). As to Howerton's expert witnesses, the Court of Appeals ruled that North Carolina has adopted *Daubert* as the proper test for judging the admissibility of scientific expert testimony. *Id.* at 332, 581 S.E.2d at 826. Notably, the Court of Appeals held that:

From a thorough review of our case law, it is eminently clear that North Carolina has adopted the *Daubert* analysis. This is not novel. *Daubert* has been the prevailing law in this state since *Goode*. Three years ago, in *Bates*, this Court expressly held that our Supreme Court in *Goode* adopted *Daubert*.

Id. Applying an abuse of discretion standard of review, the Court of Appeals evaluated the causation testimony of each of Howerton's four experts under the basic *Daubert* criteria and held that the trial court's decision to exclude all such testimony was neither arbitrary nor an abuse of discretion. *Id.* at 332-37, 581 S.E.2d at 827-30.

As to Howerton's claim of unfair and deceptive trade practices, the Court of Appeals held that the trial court properly granted summary judgment in favor of Arai. *Id.* at 340, 581 S.E.2d at 831. The court found that, even if Arai had engaged in the allegedly unfair and deceptive advertising, Howerton failed to establish that he had relied on such advertising to his detriment or that such advertising was the proximate cause of his injuries. *Id.* at 338-40, 581 S.E.2d at 830-31. Finally, with respect to Howerton's claim that Arai failed to adopt a safer, feasible design alternative, the Court of Appeals likewise affirmed the order of the trial court granting summary judgment in favor of Arai, concluding in a footnote to its opinion that the evidence forecasted by Howerton was insufficient to support a prima facie cause of action under N.C.G.S. § 99B-6. *Id.* at 337-38 n.13, 581 S.E.2d at 830 n.13.

On 21 August 2003, this Court allowed Howerton's petition for discretionary review. Among the issues raised by Howerton and which we now address are: (1) whether this Court has adopted the *Daubert* standard for determining the admissibility of expert testimony; (2) whether Howerton presented sufficient evidence to withstand summary judgment on his claim of unfair and deceptive practices; and (3) whether Howerton presented sufficient evidence to withstand summary judgment on his claim that Arai unreasonably failed to adopt a safer, feasible design alternative.

This case initially presents us with the question of whether North Carolina has adopted the federal standard under *Daubert v. Merrell Dow Pharmaceuticals* for ruling on the admissibility of expert testimony under North Carolina Rule of Evidence 702. The Court of Appeals held that we have impliedly done so and Arai argues that we should now expressly do so. For the reasons stated below, we reject both of these contentions.

Our consideration of this issue begins with an overview of the cases that have come to define the federal approach to the admissibility of expert testimony under Federal Rule of Evidence 702. In *Daubert v. Merrell Dow Pharmaceuticals*, the United States Supreme Court delineated the modern standard for admitting expert scientific testimony in federal trials. 509 U.S. 579, 125 L. Ed. 2d 469. For more than half a century prior to *Daubert*, however, federal courts relied upon the "general acceptance" test of *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), as the

exclusive standard for the admission of expert testimony in federal courts. Under *Frye*, scientific expert testimony was admissible only when based upon “sufficiently established” principles which had gained “general acceptance in the particular field in which it belongs.” *Id.* at 1014. In *Daubert* the Supreme Court held that *Frye* had been superseded by Congressional enactment of the Federal Rules of Evidence. 509 U.S. at 587-89, 125 L. Ed. 2d at 479-80. Characterizing the general acceptance standard as both “rigid” and “austere,” the Court held that *Frye* was “at odds with the 'liberal thrust' of the Federal Rules and their 'general approach of relaxing the traditional barriers to “opinion” testimony.” *Id.* at 588-89, 125 L. Ed. 2d at 480. Thus, the Court held that the *Frye* standard was no longer applicable in federal trials. *Id.* at 589, 125 L. Ed. 2d at 480.

While rejecting the general acceptance requirement of *Frye*, the Supreme Court nevertheless recognized inherent “limits on the admissibility of purportedly scientific evidence” and imposed upon trial courts an obligation to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Id.* This directive is what is commonly referred to as the trial court's “gatekeeping” function. *Id.* at 597, 125 L. Ed. 2d at 485.

Under *Daubert*, then, the trial court is instructed to preliminarily determine “whether the reasoning or methodology underlying the [expert] testimony is scientifically valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue.” *Id.* at 592-93, 125 L. Ed. 2d at 482. The focus of the trial court's inquiry in this regard “must be solely on principles and methodology, not on the conclusions that they generate.” *Id.* at 595, 125 L. Ed. 2d at 484. In particular, the Supreme Court articulated five factors it considered important measures of scientific reliability: (1) Whether the scientific theory or technique upon which the expert's opinion is based “can be (and has been) tested.” *Id.* at 593, 125 L. Ed. 2d at 483. (2) Whether the theory or technique employed by the expert “has been subjected to peer review and publication.” *Id.* (3) The “known or potential rate of error” of the scientific technique. *Id.* at 594, 125 L. Ed. 2d at 483. (4) The “existence and maintenance of standards controlling the technique's operation.” *Id.* (5) Whether the theory or technique is generally accepted within its relevant scientific community. *Id.* The Court noted that use of these factors was to be “flexible.” *Id.* at 594, 125 L. Ed. 2d at 483-84.

In the years since *Daubert*, the United States Supreme Court has continued to refine the “gatekeeping” role of federal trial courts when ruling on the admissibility of expert testimony under Federal Rule of Evidence 702. In *General Electric Co. v. Joiner*, 522 U.S. 136, 139 L. Ed. 2d 508 (1997), the Court identified abuse of discretion as the proper appellate standard by which to review a federal trial court's decision to admit or exclude scientific expert testimony. *Id.* at 146, 139 L. Ed. 2d at 519. The Court additionally suggested that under the *Daubert* analysis it is permissible for a federal trial court to exclude expert testimony that, even though methodologically sound, nonetheless reaches questionable conclusions: [C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a

district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

Id.

In *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 143 L. Ed. 2d 238 (1999), the Court extended the effect of *Daubert* to any type of specialized expert testimony proffered under Federal Rule of Evidence 702, not just expert testimony that is scientific in nature. *Id.* at 147-49, 143 L. Ed. 2d at 249-51. In a concurring opinion, it was additionally forecasted that “failure to apply one or another of [the *Daubert* factors] may be unreasonable, and hence an abuse of discretion.” *Id.* at 159, 143 L. Ed. 2d at 256-57 (Scalia, O'Connor, & Thomas, JJ., concurring). And more recently, in *Weisgram v. Marley Co.*, 528 U.S. 440, 145 L. Ed. 2d 958 (2000), the Court held that an appellate court may not only reverse a trial court's decision to admit expert testimony under *Daubert*, but that it may, instead of remand, direct the entry of judgment as a matter of law when it determines that expert testimony was erroneously admitted at trial and that the remaining evidence is insufficient to support a *prima facie* case. *Id.* at 457, 145 L. Ed. 2d at 973.

In light of this background on the admissibility of expert testimony under the federal rules, we now turn to North Carolina's established standard for admitting expert testimony and the specific issue of whether North Carolina has implicitly adopted the federal *Daubert* standard. North Carolina Rule of Evidence 702 reads, in pertinent part:

(a) 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.

N.C.G.S. § 8C-1, Rule 702(a) (2003).

It is well-established that trial courts must decide preliminary questions concerning the qualifications of experts to testify or the admissibility of expert testimony. N.C.G.S. § 8C- 1, Rule 104(a) (2003). When making such determinations, trial courts are not bound by the rules of evidence. *Id.* In this capacity, trial courts are afforded “wide latitude of discretion when making a determination about the admissibility of expert testimony.” *State v. Bullard*, 312 N.C. 129, 140, 322 S.E.2d 370, 376 (1984). Given such latitude, it follows that a trial court's ruling on the qualifications of an expert or the admissibility of an expert's opinion will not be reversed on appeal absent a showing of abuse of discretion. *State v. Anderson*, 322 N.C. 22, 28, 366 S.E.2d 459, 463, *cert. denied*, 488 U.S. 975, 102 L. Ed. 2d 548 (1988); *Bullard*, 312 N.C. at 144, 322 S.E.2d at 378; *State v. Moore*, 245 N.C. 158, 164, 95 S.E.2d 548, 552 (1956) (“[T]his Court has uniformly held that the competency of a witness to testify as an expert is a question primarily addressed to the court, and his discretion is ordinarily conclusive, that is, unless there be no evidence to support the finding, or unless the judge abuse[s] his discretion.”).

The most recent North Carolina case from this Court to comprehensively address the admissibility of expert testimony under Rule 702 is *State v. Goode*, 341 N.C. 513, 461 S.E.2d 631 (1995), which set forth a three-step inquiry for evaluating the admissibility of expert

testimony: (1) Is the expert's proffered method of proof sufficiently reliable as an area for expert testimony? *Id.* at 527-29, 461 S.E.2d at 639-40. (2) Is the witness testifying at trial qualified as an expert in that area of testimony? *Id.* at 529, 461 S.E.2d at 640. (3) Is the expert's testimony relevant? *Id.* at 529, 461 S.E.2d at 641.

In the first step of the *Goode* analysis, the trial court must determine whether the expert's method of proof is sufficiently reliable as an area for expert testimony. *Id.* at 527-29, 461 S.E.2d at 639-40. As discussed in *Goode*, the requirement of reliability is nothing new to the law of scientific and technical evidence in North Carolina and, indeed, pre-dates the federal court's adoption of the *Daubert* standard. *See id.*; *see also State v. Pennington*, 327 N.C. 89, 98, 393 S.E.2d 847, 852 (1990) (“A new scientific method of proof is admissible at trial if the method is sufficiently reliable.”); *Bullard*, 312 N.C. at 149-53, 322 S.E.2d at 381-84, (discussing factors relevant in determining whether scientific methods in their infancy are reliable); *State v. Crowder*, 285 N.C. 42, 53, 203 S.E.2d 38, 46 (1974) (expert testimony based on scientific tests “competent only when shown to be reliable”), *vacated in part on other grounds*, 428 U.S. 903, 49 L. Ed. 2d 1207 (1976).

Under *Goode*, to determine whether an expert's area of testimony is considered sufficiently reliable, “a court may look to testimony by an expert specifically relating to the reliability, may take judicial notice, or may use a combination of the two.” 341 N.C. at 530, 461 S.E.2d at 641. Initially, the trial court should look to precedent for guidance in determining whether the theoretical or technical methodology underlying an expert's opinion is reliable. Although North Carolina does not exclusively adhere to the *Frye* “general acceptance” test, *Pennington*, 327 N.C. at 98, 393 S.E.2d at 852, when specific precedent justifies recognition of an established scientific theory or technique advanced by an expert, the trial court should favor its admissibility, provided the other requirements of admissibility are likewise satisfied. *See, e.g., State v. Williams*, 355 N.C. 501, 553-54, 565 S.E.2d 609, 640 (2002) (recognizing the admissibility of DNA evidence and upholding its use as the basis of an opinion by a properly qualified expert in forensic DNA analysis), *cert. denied*, 537 U.S. 1125, 154 L. Ed. 2d 808 (2003); *Goode*, 341 N.C. at 530-31, 461 S.E.2d at 641-42 (reliability of bloodstain pattern interpretation supported in part by prior appellate acceptance of such technique in North Carolina and other jurisdictions); *State v. Barnes*, 333 N.C. 666, 680, 430 S.E.2d 223, 231 (1993) (recognizing the long-established admissibility of the results of blood group testing for identification purposes), *cert. denied*, 510 U.S. 946, 126 L. Ed. 2d 336 (1993); *Pennington*, 327 N.C. at 100, 393 S.E.2d at 854 (finding persuasive authority in other jurisdictions' acceptance of DNA profiling); *State v. Rogers*, 233 N.C. 390, 397-98, 64 S.E.2d 572, 578 (1951) (recognizing that fingerprint evidence is an established and reliable method of identification), *overruled on other grounds by State v. Silver*, 286 N.C. 709, 213 S.E.2d 247 (1975).

Conversely, there are those scientific theories and techniques that have been recognized by this Court as inherently unreliable and thus generally inadmissible as evidence. *See, e.g., State v. Hall*, 330 N.C. 808, 820-21, 412 S.E.2d 883, 890 (1992) (concluding that “evidence that a

prosecuting witness is suffering from post-traumatic stress syndrome should not be admitted for the substantive purpose of proving that a rape has in fact occurred” because of the unreliability of underlying psychiatric procedures used to diagnosis the condition); *State v. Peoples*, 311 N.C. 515, 533, 319 S.E.2d 177, 188 (1984) (holding that “hypnosis has not reached a level of scientific acceptance which justifies its use for courtroom purposes”); *State v. Grier*, 307 N.C. 628, 645, 300 S.E.2d 351, 361 (1983) (holding that polygraphs are inadmissible in any trial, even if otherwise stipulated to by the parties).

Where, however, the trial court is without precedential guidance or faced with novel scientific theories, unestablished techniques, or compelling new perspectives on otherwise settled theories or techniques, a different approach is required. Here, the trial court should generally focus on the following nonexclusive “indices of reliability” to determine whether the expert's proffered scientific or technical method of proof is sufficiently reliable: “the expert's use of established techniques, the expert's professional background in the field, the use of visual aids before the jury so that the jury is not asked 'to sacrifice its independence by accepting [the] scientific hypotheses on faith,' and independent research conducted by the expert.” *Pennington*, 327 N.C. at 98, 393 S.E.2d at 852-53 (quoting *Bullard*, 312 N.C. at 150-51, 322 S.E.2d at 382), *quoted in Goode*, 341 N.C. at 528, 461 S.E.2d at 640. Within this general framework, reliability is thus a preliminary, foundational inquiry into the basic methodological adequacy of an area of expert testimony. This assessment does not, however, go so far as to require the expert's testimony to be proven conclusively reliable or indisputably valid before it can be admitted into evidence. In this regard, we emphasize the fundamental distinction between the admissibility of evidence and its weight, the latter of which is a matter traditionally reserved for the jury. *Queen City Coach Co. v. Lee*, 218 N.C. 320, 323, 11 S.E.2d 341, 343 (1940) (“The competency, admissibility, and sufficiency of the evidence is a matter for the court to determine. The credibility, probative force, and weight is a matter for the jury. This principle is so well settled we do not think it necessary to cite authorities.”).

Therefore, once the trial court makes a preliminary determination that the scientific or technical area underlying a qualified expert's opinion is sufficiently reliable (and, of course, relevant), any lingering questions or controversy concerning the quality of the expert's conclusions go to the weight of the testimony rather than its admissibility. *See, e.g., Barnes*, 333 N.C. at 680, 430 S.E.2d at 231 (holding that a forensic serologist's failure to conduct or provide for additional, independent testing of blood samples went to the weight of the evidence, not its admissibility); *McLean v. McLean*, 323 N.C. 543, 556, 374 S.E.2d 376, 384 (1988) (concluding that deficiencies in the expert's methodology were relevant in considering the expert's credibility and the weight to be given his testimony, but that they did not render his opinion inadmissible). Here, we agree with the United States Supreme Court that “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596, 125 L. Ed. 2d at 484; *accord Hairston v. Alexander Tank & Equip. Co.*, 310 N.C. 227, 244, 311 S.E.2d 559, 571 (1984) (“It is the function of cross-examination to expose any weaknesses in [expert] testimony . . .”).

In the second step of analysis under *Goode*, the trial court must determine whether the witness is qualified as an expert in the subject area about which that individual intends to testify. 341 N.C. at 529, 461 S.E.2d at 640. Under the North Carolina Rules of Evidence, a witness may qualify as an expert by reason of “knowledge, skill, experience, training, or education,” where such qualification serves as the basis for the expert's proffered opinion. N.C.G.S. § 8C-1, Rule 702(a). As summarized in *Goode*,

“It is not necessary that an expert be experienced with the identical subject matter at issue or be a specialist, licensed, or even engaged in a specific profession.” “It is enough that the expert witness 'because of his expertise is in a better position to have an opinion on the subject than is the trier of fact.’”

341 N.C. at 529, 461 S.E.2d at 640 (citations omitted). “Whether a witness has the requisite skill to qualify as an expert in a given area is chiefly a question of fact, the determination of which is ordinarily within the exclusive province of the trial court.” *State v. Goodwin*, 320 N.C. 147, 150, 357 S.E.2d 639, 641 (1987). As pertains to the sufficiency of an expert's qualifications, we discern no qualitative difference between credentials based on formal, academic training and those acquired through practical experience. In either instance, the trial court must be satisfied that the expert possesses “scientific, technical or other specialized knowledge [that] will assist the trier of fact to understand the evidence or to determine a fact in issue.” N.C.G.S. § 8C-1, Rule 702(a); see 2 Kenneth S. Broun, *Brandis & Broun on North Carolina Evidence* § 184, at 44-45 (6th ed. 2004) (“[A] jury may be enlightened by the opinion of an experienced cellar-digger, or factory worker, or shoe merchant, or a person experienced in any other line of human activity. Such a person, when performing such a function, is as truly an 'expert' as is a learned specialist . . .” (footnotes omitted)).

The third and final step under *Goode* concerns the relevancy of the expert's testimony. The trial court must always be satisfied that the expert's testimony is relevant. *Goode*, 341 N.C. at 529, 461 S.E.2d at 641. To this end, we defer to the traditional definition of relevancy set forth in the North Carolina Rules of Evidence: “Relevant evidence' means evidence having 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.” N.C.G.S. § 8C-1, Rule 401 (2003). As stated in *Goode*, “in judging relevancy, it should be noted that expert testimony is properly admissible when such testimony can assist the jury to draw certain inferences from facts because the expert is better qualified than the jury to draw such inferences.” 341 N.C. at 529, 461 S.E.2d at 641.

We further note that, in addition to the foregoing principles of reliability under Rule 702, a trial court has inherent authority to limit the admissibility of all evidence, including expert testimony, under North Carolina Rule of Evidence 403, which provides that relevant evidence may nonetheless be excluded “if its probative value is substantially outweighed by the danger of

unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.” N.C.G.S. § 8C-1, Rule 403 (2003); *see State v. Mackey*, 352 N.C. 650, 657, 535 S.E.2d 555, 559 (2000) (“[U]nder Rule 403 even relevant [expert] evidence may properly be excluded by the trial court if its probative value is outweighed by the danger that it would confuse the issues before the court or mislead the jury.” (citations omitted)); *Newton v. New Hanover County Bd. of Educ.*, 342 N.C. 554, 565, 467 S.E.2d 58, 66 (1996) (“The expert's testimony, even if relevant, must also have probative value that is not substantially outweighed by the danger of unfair prejudice, confusion, or undue delay.”). Whether to exclude expert testimony under Rule 403 is within the sound discretion of the trial court and will only be reversed on appeal for abuse of discretion. *Anderson*, 322 N.C. at 28, 366 S.E.2d at 463.

Based on our review of these well-settled principles of North Carolina law governing the admissibility of expert testimony under North Carolina Rule of Evidence 702, we are satisfied that our own approach is distinct from that adopted by the federal courts. Contrary to the conclusion of the Court of Appeals, it is not “eminently clear” that North Carolina adopted the *Daubert* standard. Such a bold proposition is neither confirmed by the case law of this Court nor buttressed by the “express holding” of the lower court in *State v. Bates*, 140 N.C. App. 743, 748, 538 S.E.2d 597, 600 (2000), *disc. rev. denied*, 353 N.C. 383, 547 S.E.2d 19 (2001), which was nothing more than a passing citation parenthetical suggesting without analysis or discussion that this Court had adopted *Daubert* in the *Goode* opinion.

In *Goode*, this Court made but one reference to *Daubert*:

As recognized by the United States Supreme Court in its most recent opinion addressing the admissibility of expert scientific testimony, this requires a preliminary assessment of whether the reasoning or methodology underlying the testimony is sufficiently valid and whether that reasoning or methodology can be properly applied to the facts in issue. *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, ___ U.S. ___, 125 L. Ed. 2d 469 (1993).

341 N.C. at 527, 461 S.E.2d at 639. This was the first and the only time that this Court has ever referenced *Daubert* prior to our present analysis. We did so to underscore the generally acknowledged importance of preliminarily assessing the reliability of the reasoning or methodology underlying expert testimony.

As described above, however, our focus on reliability in this context had been developing under North Carolina case law for many years prior to *Daubert*. *See, e.g., Bullard*, 312 N.C. at 150-54, 322 S.E.2d at 382-85 (ruling that expert testimony concerning footprint identification was reliable because of the expert's explanatory testimony, professional achievements, independent research, and use of scientifically established techniques); *State v. Temple*, 302 N.C. 1, 12, 273 S.E.2d 273, 280 (1981) (ruling that expert testimony concerning bite mark identification was reliable when such testimony was based upon the application of “scientifically established

techniques of dentistry and photography to the solution of a particular novel problem”); *Crowder*, 285 N.C. at 53-54, 203 S.E.2d at 46 (ruling that the expert's use of flameless atomic absorption spectrophotometry to identify gunshot residue on defendant's hands was a reliable basis for testimony where the expert was experienced in the field of gunshot residue and had presented technical papers on the subject, and independent research verified the reliability of his testing methodology).

While these and other North Carolina cases share obvious similarities with the principles underlying *Daubert*, application of the North Carolina approach is decidedly less mechanistic and rigorous than the “exacting standards of reliability” demanded by the federal approach. See *Weisgram*, 528 U.S. at 455, 145 L. Ed. 2d at 972. Moreover, had we ever intended to adopt *Daubert* and supercede this established body of North Carolina case law, we would certainly have referenced the basic *Daubert* factors that have come to define the federal standard. But we did not.

We did not do so because we are not satisfied that the federal approach offers the most workable solution to the intractable challenge of separating reliable expert opinions from their unreliable counterparts, of distinguishing science from pseudoscience, or of discerning where in this “twilight zone” a “scientific principle or discovery crosses the line between the experimental and demonstrable stages.” *Frye*, 293 F. at 1014. Obviously, there are no easy solutions to the inherent difficulties of determining the legal reliability of scientific and technical hypotheses. While the law works towards conclusiveness and finality, science operates on an evolving continuum of probabilities and likelihoods that, in many instances, is not consonant with the legal paradigm. In light of this dilemma, our challenge is to define a standard of admissibility that does not create more problems than it solves and that does not raise more questions than it answers.

One of the most troublesome aspects of the *Daubert* “gatekeeping” approach is that it places trial courts in the onerous and impractical position of passing judgment on the substantive merits of the scientific or technical theories undergirding an expert's opinion. We have great confidence in the skillfulness of the trial courts of this State. However, we are unwilling to impose upon them an obligation to expend the human resources required to delve into complex scientific and technical issues at the level of understanding necessary to generate with any meaningfulness the conclusions required under *Daubert*. Indeed, this concern was adeptly described by the Ninth Circuit after *Daubert* had been remanded and again appealed:

[T]hough we are largely untrained in science and certainly no match for any of the witnesses whose testimony we are reviewing, it is our responsibility to determine whether those experts' proposed testimony amounts to “scientific knowledge,” constitutes “good science,” and was “derived by the scientific method.”

The task before us is more daunting still when the dispute concerns matters at the very cutting edge of scientific research, where fact meets theory and certainty dissolves into probability. As

the record in this case illustrates, scientists often have vigorous and sincere disagreements as to what research methodology is proper, what should be accepted as sufficient proof for the existence of a “fact,” and whether information derived by a particular method can tell us anything useful about the subject under study.

Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to resolve disputes among respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not “good science,” and occasionally to reject such expert testimony because it was not “derived by the scientific method.”

Daubert v. Merrell Dow Pharmaceuticals, Inc., 43 F.3d 1311, 1316 (9th Cir. 1995), *cert. denied*, 516 U.S. 869, 133 L. Ed. 2d 126 (1995). This same sentiment has been echoed in the writings of countless other courts and commentators. *See, e.g., Ruiz-Troche v. Pepsi Cola of P.R. Bottling Co.*, 161 F.3d 77, 81 (1st Cir. 1998) (noting that “choreographing the *Daubert* pavane remains an exceedingly difficult task. Few federal judges are scientists, and none are trained in even a fraction of the many scientific fields in which experts may seek to testify.”); *Zuchowicz v. United States*, 870 F. Supp. 15, 19 (D. Conn. 1994) (“[J]udges may not always have the 'special competence' to resolve complex issues which stand 'at the frontier of current medical and epidemiological inquiry.'” (citations omitted)); *Goeb v. Tharaldson*, 615 N.W.2d 800, 812-13 (Minn. 2000) (observing that “*Daubert* takes from scientists and confers upon judges uneducated in science the authority to determine what is scientific. This approach, which necessitates that trial judges be 'amateur scientists,' has also been frequently criticized.” (citations omitted)); 29 Charles A. Wright & Victor J. Gold, *Federal Practice and Procedure* § 6266, at 271 (1997) (“It is unrealistic to think that courts can resolve disputes concerning the scientific validity of issues on the frontiers of modern science where even the experts may disagree. As a result, *Daubert* has been harshly criticized for imposing such a burden on the lower courts.” (footnotes omitted)); George D. Marlow, *From Black Robes to White Lab Coats: The Ethical Implications of a Judge's Sua Sponte, Ex Parte Acquisition of Social and Other Scientific Evidence During the Decision-Making Process*, 72 St. John's L. Rev. 291, 333 (1998) (contending that “few judges possess the academic credentials or the necessary experience and training in scientific disciplines to separate competently high quality, intricate scientific research from research that is flawed”). When the United States Supreme Court jettisoned the “rigid 'general acceptance' requirement” of *Frye*, it did so in order to further the “liberal thrust’ of the Federal Rules and their 'general approach of relaxing the traditional barriers to “opinion” testimony.” *Daubert*, 509 U.S. at 588, 125 L. Ed. 2d at 480. We believe that in practice, however, application of the “flexible” *Daubert* standard has been anything but liberal or relaxed and that trial courts, such as the one in the present case, have often been reluctant to stray far from the original *Daubert* factors in their analysis of the reliability of expert testimony. As expressed by one critic,

Those who predicted that trial judges would flex their gatekeeper muscles to exclude vast quantities of plaintiffs' proposed expert causation opinion testimony in products liability cases

have turned out to be right. The post-*Daubert* era can fairly be described as the period of “strict scrutiny” of science by non-scientifically trained judges.

Lucinda M. Finley, *Guarding the Gate to the Courthouse: How Trial Judges Are Using Their Evidentiary Screening Role to Remake Tort Causation Rules*, 49 DePaul L. Rev. 335, 341 (1999); *see also* *Goeb*, 615 N.W.2d at 812-14 (rejecting *Daubert* on grounds that, among other things, *Daubert* has not achieved its stated intention of relaxing the barriers to the admissibility of expert testimony); 2 Michael H. Graham, *Handbook of Federal Evidence* § 702.5, at 461-62 (5th ed. 2001) (“*Daubert* is a very incomplete case if not a very bad decision. It did not, in any way, accomplish what it was meant to, i.e., encourage more liberal admissibility of expert witness evidence. In fact, *Daubert* overall in practice actually created a more stringent test for expert evidence admissibility especially in civil cases.”); David Crump, *The Trouble with Daubert-Kumho: Reconsidering the Supreme Court's Philosophy of Science*, 68 Mo. L. Rev. 1, 40 (2003) (“[A]s often happens, a premature pronouncement that was intended to be flexible has become an established set of criteria. It was foolhardy for the Court to ignore what was going to happen, which was that trial judges would consider the four *Daubert* factors to be legal principles established by the Supreme Court.” (footnotes omitted)).

As a consequence of these stringent threshold standards for admitting expert testimony, we are concerned with the case-dispositive nature of *Daubert* proceedings, whereby parties in civil actions may use pre-trial motions to exclude expert testimony under *Daubert* to bootstrap motions for summary judgment that otherwise would not likely succeed. As expressed in dicta by one federal trial court, This court notes that inherently, the judge's role in a *Daubert* determination [is] fraught with conflict. In most cases, if the court bars the testimony of one party's expert witness or witnesses, that party is unable to present an essential element of his or her claim, or to proffer a defense. Accordingly, judges are aware that applying *Daubert* heavily has the effect of lightening one's caseload, as a party stripped of its expert often must dismiss the claims or settle the lawsuit.

Brasher v. Sandoz Pharms. Corp., 160 F. Supp. 2d 1291, 1295 n.12 (N.D. Ala. 2001); *see also* Lloyd Dixon & Brian Gill, RAND Institute for Civil Justice, *Changes in the Standards for Admitting Expert Evidence in Federal Civil Cases Since the Daubert Decision* 62 (2001) (“Challenges to expert evidence increasingly resulted in summary judgment after *Daubert*.”). Procedurally, this imbalance may be explained because trial courts apply different evidentiary standards when ruling on motions to exclude expert testimony and motions for summary judgment. In a motion for summary judgment, the evidence presented to the trial court must be admissible at trial, N.C.G.S. § 1A-1, Rule 56(e) (2003), and must be viewed in a light most favorable to the non-moving party. *Caldwell v. Deese*, 288 N.C. 375, 378, 218 S.E.2d 379, 381 (1975). Where there are genuine, conflicting issues of material fact, the motion for summary judgment must be denied so that such disputes may be properly resolved by the jury as the trier of fact. *Kessing v. Nat'l Mortgage Corp.*, 278 N.C. 523, 534, 180 S.E.2d 823, 830 (1971) (“Since this rule provides a somewhat drastic remedy, it must be used with due regard to its purposes and a cautious observance of its requirements in order that no person shall be deprived of a trial on a

genuine disputed factual issue.”). Not so in the case of preliminary motions to exclude expert testimony under *Daubert*, which are resolved under Rule of Evidence 104(a). Here, trial courts are not bound by the rules of evidence, are not required to view the evidence in a light favorable to the non-movant, and may preliminarily resolve conflicting issues of fact relevant to the *Daubert* admissibility ruling. N.C.G.S. § 8C-1, Rule 104(a). Taking advantage of these procedural differences, a party may use a *Daubert* hearing to exclude an opponent's expert testimony on an essential element of the cause of action. With no other means of proving that element of the claim, the non-moving party would inevitably perish in the ensuing motion for summary judgment. By contrast, a party who directly moves for summary judgment without a preliminary *Daubert* determination will not likely fare as well because of the inherent procedural safeguards favoring the non-moving party in motions for summary judgment.

In such instances, we are concerned that trial courts asserting sweeping pre-trial “gatekeeping” authority under *Daubert* may unnecessarily encroach upon the constitutionally- mandated function of the jury to decide issues of fact and to assess the weight of the evidence. *See* N.C. Const. art I, § 25. *See also* *Brasher*, 160 F. Supp. 2d at 1295 (applying *Daubert*, but acknowledging that “[f]or the trial court to overreach in the gatekeeping function and determine whether the opinion evidence is correct or worthy of credence is to usurp the jury's right to decide the facts of the case”); *Logerquist v. McVey*, 196 Ariz. 470, 488, 1 P.3d 113, 131 (2000) (“The *Daubert/Joiner/Kumho* trilogy of cases . . . puts the judge in the position of passing on the weight or credibility of the expert's testimony, something we believe crosses the line between the legal task of ruling on the foundation and relevance of evidence and the jury's function of whom to believe and why, whose testimony to accept, and on what basis.”); *Bunting v. Jamieson*, 984 P.2d 467, 472 (Wyo. 1999) (adopting *Daubert*, but nonetheless expressing concern that “application of the *Daubert* approach to exclude evidence has been criticized as a misappropriation of the jury's responsibilities. . . . [I]t is imperative that the jury retain its fact-finding function.” (citations omitted)).

Although our criticism of *Daubert* is largely anecdotal and by no means exhaustive, given the serious implications of these concerns, we believe that on balance the North Carolina law which has coalesced in *Goode* establishes a more workable framework for ruling on the admissibility of expert testimony under North Carolina Rule of Evidence 702. Long before *Daubert* was decided, North Carolina had in place a flexible system of assessing the foundational reliability of expert testimony, the practicability of which is evidenced by the case law. Within this system, our trial courts are already vested with broad discretion to limit the admissibility of expert testimony as necessitated by the demands of each case. Requiring a more complicated and demanding rule of law is unnecessary to assist North Carolina trial courts in a procedure which we do not perceive as in need of repair. We therefore expressly reject the federal *Daubert* standard upon which both the trial court and the Court of Appeals erroneously based their respective rulings. North Carolina is not, nor has it ever been, a *Daubert* jurisdiction. “When the order or judgment appealed from was entered under a misapprehension of the applicable law, the judgment, including the findings of fact and conclusions of law on which the judgment was based, will be vacated and the case remanded for further proceedings.” *Concerned Citizens of Brunswick County Taxpayers Ass'n v. Holden Beach Enters.*, 329 N.C. 37, 54-55, 404 S.E.2d 677, 688

(1991). Accordingly, we hereby vacate the judgment of the trial court on this issue and reverse the opinion of the Court of Appeals affirming that judgment. The matter is remanded to the trial court for further proceedings not inconsistent with this opinion.

The next major issue for our review is whether the Court of Appeals properly affirmed summary judgment in favor of Arai with respect to Howerton's claim of unfair and deceptive trade practices under N.C.G.S. § 75-1.1. Howerton alleged in his amended complaint that Arai intentionally disseminated false and misleading information concerning the safety of his helmet, which led him to believe that the helmet provided superior protection from injury and was the “best in the market.” In particular, Howerton alleges that Arai placed a “Snell” sticker on the helmet, indicating its safety certification by the Snell Memorial Foundation, which conducts independent testing of various types of helmets. Howerton claims that the sticker gave him a false impression of superior protection as to the helmet's overall safety when, in fact, the “Snell” certification did not apply to the chin guard in dispute.

Without elaboration, the trial court granted summary judgment in favor of Arai on this claim. The Court of Appeals affirmed, concluding that “even assuming that Arai engaged in an unfair and deceptive trade practice in or affecting commerce, the deposition testimony of Dr. Howerton clearly demonstrates that he did not, in fact, detrimentally rely on the assumed misrepresentation.” *Howerton*, 158 N.C. App. at 339, 581 S.E.2d at 830.

“In order to establish a *prima facie* claim for unfair trade practices, a plaintiff must show: (1) defendant committed an unfair or deceptive act or practice, (2) the action in question was in or affecting commerce, and (3) the act proximately caused injury to the plaintiff.” *Dalton v. Camp*, 353 N.C. 647, 656, 548 S.E.2d 704, 711 (2001); *see also* N.C.G.S. § 75-1.1 (2003). Summary judgment is appropriate where “there is no genuine issue as to any material fact” and “any party is entitled to a judgment as a matter of law.” N.C.G.S. § 1A-1, Rule 56(c) (2003). In ruling on a motion for summary judgment, “the court may consider the pleadings, depositions, admissions, affidavits, answers to interrogatories, oral testimony and documentary materials.” *Dendy v. Watkins*, 288 N.C. 447, 452, 219 S.E.2d 214, 217 (1975). All such evidence must be considered in a light most favorable to the non-moving party. *Summey v. Barker*, 357 N.C. 492, 496, 586 S.E.2d 247, 249 (2003). On appeal, an order allowing summary judgment is reviewed *de novo*. *Id.*

In the present case, the record reveals a genuine issue of material fact as to Howerton's reliance on Arai's alleged misrepresentations. By Howerton's own testimony, he conducted considerable research before purchasing his motorcycle helmet. Howerton subscribed to two off-road motorcycle magazines from which he gleaned significant information and impressions concerning Arai helmets. He stated that he would have read closely all of Arai's advertisements, including the “Important Note” and “Snell” certified representations contained therein, because it was his practice to read all of his off-road magazines to stay abreast of product information. Perhaps most importantly, Howerton testified that “I would not have purchased the [Arai] MX/a

helmet had I known the true facts because I would not have been convinced that the Arai MX/a offered the same overall level of protection as a full face helmet with an integral chin guard.” Although Arai presented some evidence calling into question Howerton's reliance on the advertisements at issue, it is not the function of this Court, or the trial court for that matter, to weigh conflicting evidence of record. Rather, in cases such as this, when there are genuine issues of material fact that are legitimately called into question, summary judgment should be denied and the issue preserved for the jury.

Accordingly, as to Howerton's claim of unfair and deceptive trade practices and whether Howerton relied on the alleged misrepresentations by Arai, we conclude that the Court of Appeals erred in affirming summary judgment in favor of Arai.

The final issue for our review is whether Howerton forecasted sufficient evidence to establish a prima facie claim that Arai unreasonably failed to adopt a safer, feasible design alternative, as required under N.C.G.S. § 99B-6. *See* N.C.G.S. § 99B-6 (2003). In a footnote to its opinion, the Court of Appeals concluded that Howerton failed to adduce such evidence and affirmed the trial court's granting of summary judgment in favor of Arai on this issue. *Howerton*, 158 N.C. App. at 337-38 n.13, 581 S.E.2d at 830 n.13. The Court of Appeals based its conclusion on a 1981 motorcycle helmet safety report authored by Professor Hugh H. Hurt, Jr., one of Howerton's experts, which concluded in part that full-face helmet designs were actually associated with more neck injuries than open-face helmet designs. *Id.* According to the Court of Appeals, Professor Hurt's 1981 report completely undermined all evidentiary basis for Howerton's claim that Arai failed to adopt a safer, feasible design alternative. *Id.*

We fail to see how the Court of Appeals could first exclude Professor Hurt's expert testimony as unreliable and then subsequently embrace the merits of the very same evidence in support of alternative grounds for summary judgment favoring Arai. Moreover, a review of the record reveals deposition testimony by Professor Hurt that clearly supports Howerton's claim that Arai's flexible chin bar was inadequately designed within the meaning of N.C.G.S. § 99B-6. Thus, even if the Court of Appeals appropriately considered Professor Hurt's published report, there is nevertheless a legitimate conflict of evidence raised by Professor Hurt's deposition testimony that creates a genuine issue of material fact precluding summary judgment under Rule 56 of the North Carolina Rules of Civil Procedure.

As with the causation issue, review of whether Arai failed to adopt a safer, feasible design alternative under N.C.G.S. § 99B-6 is enmeshed with, if not altogether dependent on, the opinions of Howerton's experts. We therefore conclude that the Court of Appeals erred in upholding summary judgment in favor of Arai on Howerton's section 99B-6 claim based on inadequate product design. In summary, for the reasons stated above, we hereby reverse the opinion of the Court of Appeals in its entirety and vacate the judgment of the trial court in its entirety. The case is remanded to the Court of Appeals with instructions to remand to the trial court for further proceedings not inconsistent with this Court's opinion.
REVERSED AND REMANDED.

Justice BRADY did not participate in the consideration or decision of this case.

Justice PARKER concurring in part and dissenting in part.

I concur in the majority's holding that this Court has not adopted the federal test for admissibility of expert testimony enunciated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 125 L. Ed 2d 469 (1993), and in the decision not to adopt the *Daubert* factors as the test for determining admissibility of expert testimony under Rule 702 of the North Carolina Rules of Evidence but to continue to adhere to the test enunciated in our prior case law.

However, I am constrained to dissent respectfully from the holding of the majority reversing the opinion of the Court of Appeals and vacating the trial court's order allowing defendant's motion to exclude testimony of plaintiff's experts and the trial court's order allowing defendants' omnibus motion for summary judgment. In my view plaintiff's experts' testimony failed to satisfy the first prong of the three-part analysis set forth in the majority opinion based on this Court's decision in *State v. Goode*, 341 N.C. 513, 461 S.E.2d 631 (1995), namely, whether “the expert's proffered method of proof [is] sufficiently reliable as an area for expert testimony.” As revealed in the careful analysis of the evidence in the trial court's findings, none of plaintiff's expert witnesses had done independent research or used established techniques to substantiate their respective proffered hypotheses as to (i) how the injury occurred, and (ii) whether the injury would have been prevented had plaintiff's helmet had a rigid mouth guard rather than a flexible one. *See State v. Pennington*, 327 N.C. 89, 98, 393 S.E.2d 847, 852-53 (1990) (stating nonexclusive indices of reliability).

The trial court relied on both *Daubert* and *Pennington* in exercising its discretion to exclude the experts' testimony as to causation. Given this Court's jurisprudence governing the admissibility of expert testimony, the trial court's use of the *Daubert* factors does not in my opinion render the trial court's ruling fatally defective. *See Shore v. Brown*, 324 N.C. 427, 428, 378 S.E.2d 778, 779 (1989) (stating that “[i]f the correct result has been reached, the judgment will not be disturbed even though the trial court may not have assigned the correct reason for the judgment entered”). I would also vote to affirm the Court of Appeals' decision upholding the trial court's summary judgment for defendants on plaintiff's section 99B-6 and unfair and deceptive practices claims.

Footnote: 1 As indicated by the pleadings, *Arai Helmet, Ltd.* technically consists of *Arai Helmet (Japan) Limited*, a Japanese corporation that manufactures motorcycle helmets, and *Arai Helmet (Americas) Limited*, a New Jersey corporation that markets the helmets. Collectively, we refer to these multiple *Arai* defendants as “*Arai*.”