



Case Western Reserve Law Review

Volume 68 | Issue 3

2018

Paul Giannelli's Scholarship of Measured Wisdom, Sophistication, and Significance, and a Man of Diligence, Humor, and Graciousness

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Recommended Citation

Robert P. Mosteller and Kenneth S. Broun, *Paul Giannelli's Scholarship of Measured Wisdom, Sophistication, and Significance, and a Man of Diligence, Humor, and Graciousness*, 68 Case W. Res. L. Rev. 805 (2018)

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Robert P. Mosteller & Kenneth S. Broun^{††}

PAUL GIANNELLI'S SCHOLARSHIP OF
MEASURED WISDOM, SOPHISTICATION,
AND SIGNIFICANCE, AND A MAN OF
DILIGENCE, HUMOR, AND
GRACIOUSNESS

We had the great fortune to have Paul Giannelli join our evidence casebook more than fifteen years ago upon the retirement of our co-author Professor John Strong. Some years later, Paul also became a co-author of our evidence problem book. In this piece, we make comments, first regarding Paul as an exceptional evidence scholar as reflected in his contribution to our evidence casebook, and second regarding Paul as a wonderful co-author and colleague.

I. PAUL GIANNELLI—EXCEPTIONAL EVIDENCE SCHOLAR

Paul brought rich insights and detailed knowledge of evidence law across a broad range of topics to our casebook¹ and contributed in many different ways. As the lead author of the comprehensive, frequently-cited text, *Scientific Evidence*,² he was in a unique position to make an especially strong contribution to our book in the area of expert testimony and related matters. This Article gives us an opportunity to stress his enormous impact on the development of the law of expert evidence and particularly his analysis of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*³

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1. KENNETH S. BROUN, ROBERT P. MOSTELLER & PAUL C. GIANNELLI, EVIDENCE: CASES AND MATERIALS (8th ed. 2014).
2. PAUL C. GIANNELLI ET AL., SCIENTIFIC EVIDENCE (5th ed. 2012).
3. 509 U.S. 579 (1993).

Paul brought an impressive measure of sophistication, careful distinctions, and depth of knowledge to this discussion. His analysis of the impact of *Daubert* and *Kumho Tire*⁴ on the treatment of expert evidence admissibility presented in one short note describing the impact of *Daubert* and its progeny on the development of the law in the states is particularly insightful.⁵ In the note, he briefly set out six different and significant observations:⁶ (1) He recognized the complexity of the effects of the *Daubert* case, noting that some states adopted *Daubert*, but not the other two cases in the trilogy;⁷ (2) Paul observed that features of *Daubert* have crept into the analysis in states that have continued to use the *Frye* test;⁸ (3) he found that after *Daubert* was decided, *Frye*—which had generally been limited to criminal cases—was extended to civil torts cases; (4) he noted that *Daubert*'s greatest impact was on states that formerly used the relevancy approach, although the impact is often denied by the jurisdiction, claiming consistency in approach before and after substantial changes; (5) he observed that while some states adopted a *Daubert*-like system, having rejected *Frye* before *Daubert* was decided, they use a decidedly different set of tests; (6) finally, Paul questioned the significance of the jurisdiction's choice between using a *Daubert*- or *Frye*-based approach to the admission of expert evidence. He described an existing difference in *Frye* states between those that were strict and those that were lax in their scrutiny of the admission of expert testimony. He observed that the most significant difference between the approaches in different jurisdictions is not based on the choice between *Daubert* or *Frye*-based systems, but between strict or lax scrutiny.⁹

Elsewhere, Paul dealt with which system—*Daubert* or *Frye*—provides “the better approach.” His response, based on the insight of the Washington Supreme Court, is that the difficulties of applying *Frye* in some contexts is often related to the complexity of the issue and that truly complex and controversial evidence is going to be difficult under either standard.¹⁰

He drew the distinction between the impact of *Daubert* in civil cases, where evidence has been examined more closely and more evidence has been found unreliable, as contrasted to the treatment of

4. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

5. BROUN, MOSTELLER & GIANNELLI, *supra* note 1, at 650–51.

6. *Id.*

7. The trilogy includes *Daubert*, *Kumho Tire*, and *General Electric Co. v. Joiner*, 522 U.S. 136 (1997).

8. *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

9. BROUN, MOSTELLER & GIANNELLI, *supra* note 1, at 650–51.

10. *Id.* at 637.

criminal cases where admissibility standards have remained largely unchanged.¹¹

Finally, he chose Judge Nancy Gertner's decision in *United States v. Hines*¹² as one of the principal cases in the chapter.¹³ Among other insights from this case is the appropriately different treatment of reliability for different issues that themselves differ in complexity. Judge Gertner found the validity of handwriting analysis insufficiently established to allow the expert to give an opinion that the defendant was the writer of the "stickup" note in a robbery case, but adequately validated to provide guidance to the jury in reaching its own decision as to whether the defendant was the author of that note. Paul clearly recognized that Judge Gertner's limitation on giving an opinion of authorship did not represent the majority position in the federal courts.¹⁴ Nevertheless, the insight that when an expert exercises a teaching function, providing information to jurors to aid their evaluation of the evidence, as authorized by the "or otherwise" language in Rule 702,¹⁵ validity under *Daubert* must be shown, but the extent of the validity showing is not necessarily as extensive.¹⁶

All of these insights are, in our judgment, both cogent and well framed. Paul compressed an extraordinary quantity of information and insights into a very compact space and presented it in a coherent way that was very accessible to teachers and students alike.

As evidence teachers who live in North Carolina and each have an evidence treatise for practitioners in the state,¹⁷ we found these points particularly insightful as our state courts wrestled with the impact of the *Daubert* decision on North Carolina's treatment of expert testimony. We believe that the development of the law regarding expert testimony dealing with the reliability of expert testimony in our state strongly supports and illustrates the points Paul makes in our casebook. The importance of the state court's analysis depends more upon

11. *Id.* at 648–49.

12. 55 F. Supp. 2d 62 (D. Mass. 1999).

13. BROUN, MOSTELLER & GIANNELLI, *supra* note 1, at 651–58.

14. *Id.* at 658.

15. See FED. R. EVID. 702 advisory committee's note to 2000 amendment.

16. See D. Michael Risinger, *Preliminary Thoughts on a Functional Taxonomy of Expertise for the Post-Kumho World*, 31 SETON HALL L. REV. 508, 533–37 (2000) (arguing for different threshold standards for different kinds of expert evidence).

17. KENNETH S. BROUN, BRANDIS & BROUN ON NORTH CAROLINA EVIDENCE (7th ed. 2017); ROBERT P. MOSTELLER ET AL., NORTH CAROLINA EVIDENTIARY FOUNDATIONS (3d ed. 2016).

whether the court takes a strict or a lax approach to the analysis of expert testimony than whether the state labels itself a *Daubert*, *Frye*, or something-else jurisdiction.

North Carolina Was a Pre-Daubert Reliability State with a Very Different Set of Tests

Beginning in 1984 with its decision in *State v. Bullard*¹⁸ and continuing the development with *State v. Pennington*¹⁹ in 1990, North Carolina rejected exclusive adherence to *Frye*. It also developed its own separate reliability test for admissibility of expert testimony as *Daubert* later did in the federal courts.²⁰

A Period of Uncertainty Whether North Carolina Became a “Daubert State” Through Judicial Analysis

Whether North Carolina had in fact become a “*Daubert* state” became a matter of uncertainty and debate in 1995 when *State v. Goode*,²¹ cited *Daubert* with apparent approval.²² The North Carolina Court of Appeals read this citation to mean that North Carolina had

18. 322 S.E.2d 370, 381–82 nn.14–15 (N.C. 1984).

19. 393 S.E.2d 847, 852–53 (N.C. 1990).

20. In *State v. Pennington*, the North Carolina Supreme Court stated:

A new scientific method of proof is admissible at trial if the method is sufficiently reliable. Reliability of a scientific procedure is usually established by expert testimony, and the acceptance of experts within the field is one index, though not the exclusive index, of reliability. Thus we do not adhere exclusively to the formula, enunciated in *Frye v. United States*, and followed in many jurisdictions, that the method of proof “must be sufficiently established to have gained general acceptance in the particular field in which it belongs.” Believing that the inquiry underlying the *Frye* formula is one of the reliability of the scientific method rather than its popularity within a scientific community, we have focused on the following indices of reliability: 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.

Id. (citations omitted).

21. 461 S.E.2d 631 (N.C. 1995).

22. *Id.* at 639. The court stated “[a]s 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.” *Id.* (citing *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993)).

in some form adopted *Daubert* as its test,²³ and it applied the *Daubert* analysis in *Howerton v. Arai Helmet, Ltd.*²⁴

A Clear Rejection of Adoption of Daubert as the Method for Judging Expert Admissibility by the North Carolina Supreme Court and a Choice of “Lax” Application

In its opinion reversing the lower court’s *Howerton* decision, the North Carolina Supreme Court left no room for uncertainty. It clearly rejected the Court of Appeals’ conclusion, stating that “North Carolina is not, nor has it ever been, a *Daubert* jurisdiction.”²⁵

Paul has noted that a critical distinction between jurisdictions that is generally more significant than whether the *Frye* test or the *Daubert* test was employed was whether the jurisdiction was strict or lax in its application of the test. The North Carolina Supreme Court judged the dominant *Daubert* test to be too strict and clearly chose the merits of scrutiny that was more flexible. The court used the quoted language below to describe its negative view of what it saw as an overly rigid and excessively exacting *Daubert* system and its negative impact on the right to a jury trial in contrast to what it perceived to be a more flexible North Carolina reliability-based system.

While 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.”²⁶ The court stated:

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 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

23. *State v. Bates*, 538 S.E.2d 597, 600 (N.C. Ct. App. 2000) (stating that *Goode* had adopted *Daubert*).

24. 581 S.E.2d 816, 826 (N.C. Ct. App. 2003) (“From a thorough review of our case law, it is eminently clear that North Carolina has adopted the *Daubert* analysis.”).

25. *Howerton v. Arai Helmet, Ltd.*, 597 S.E.2d 674, 693 (N.C. 2004).

26. *Id.* at 690 (citing *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000)).

Daubert to bootstrap motions for summary judgment that otherwise would not likely succeed.²⁷

When evidence is excluded in pre-trial hearings, the court stated “we are concerned that trial courts asserting sweeping pre-trial ‘gate-keeping’ 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.”²⁸ And in summary, the North Carolina Supreme Court stated:

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.²⁹

Adoption of Daubert Analysis for North Carolina by Legislative Action

In 2011, as part of a group of “Tort Reform” changes in the law, the North Carolina legislature amended North Carolina Rule 702(a) to follow the wording of Federal Rule 702 after it was amended in 2000.³⁰ Previously this part of the North Carolina statute had tracked the wording of the original version of Federal Rule 702, with one exception. Federal Rule 702 provided that the witness may testify in the form of an opinion “or otherwise.” The North Carolina rule as initially

27. *Id.* at 691.

28. *Id.* at 692 (citing N.C. Const. art. I, § 25; *Brasher v. Sandoz Pharm.*, 160 F. Supp. 2d 1291, 1295 (N.D. Ala. 2001); *Logerquist v. McVey*, 1 P.3d 113, 131 (Ariz. 2000); *Bunting v. Jamieson*, 984 P.2d 467, 472 (Wyo. 1999)).

29. *Id.* at 692–93.

30. An Act to Provide Tort Reform for North Carolina Citizens and Businesses, H.B. 542, 2011 Gen. Assemb. § 1.3 (N.C. 2011).

promulgated eliminated “or otherwise.”³¹ Because the change in the state’s rule was made effective only prospectively,³² it was not until 2016 that the North Carolina Supreme Court interpreted the effect of the amendment. It did so in *State v. McGrady*,³³ a criminal case in which the testimony of a use-of-force expert offered by the defense had been excluded on the basis of *Daubert* analysis.³⁴

In *McGrady*, the North Carolina Supreme Court explained the changes resulting from the 2011 amendment. Reversing the court’s statement in *Howerton*, it declared that “North Carolina is now a *Daubert* state.”³⁵

In our casebook, Paul noted differences in the rigor in which the *Daubert* standards have been applied among states that have “adopted” *Daubert*.³⁶ In *McGrady*, the court attempted to set out how the federal rule, advisory committee commentary, and case law was to be applied in North Carolina. The federal rule codified the full breath of the *Daubert* standard.³⁷ “By adopting virtually the same language from the federal rule into the North Carolina rule, the General Assembly thus adopted the meaning of the federal rule as well.”³⁸ The adopted “*Daubert* standard” also includes existing North Carolina precedents, as long as those precedents do not conflict with the amended rule’s text or those three United States Supreme Court decisions, but would not include subsequent federal developments.³⁹

The Major Change: The New Standard Is More Rigorous

While the 2011 amendment did not change the basic structure of the inquiry under the previous North Carolina rule or displace relevant tests of reliability under *Howerton*, the amendment had a significant impact on the “lax” standards for admission of expert evidence. It changed “the level of rigor that [North Carolina] courts must use to

31. See MOSTELLER ET AL., *supra* note 17, at app. 1 at art. 7 (setting out official commentary by the drafters to the original North Carolina rule).

32. H.B. 542, § 4.2 (making the provisions of the amended evidence rule effective to actions commenced after October 1, 2011).

33. 787 S.E.2d 1 (N.C. 2016).

34. *Id.* at 5.

35. *Id.* at 8.

36. BROWN, MOSTELLER & GIANNELLI, *supra* note 1, at 651.

37. *McGrady*, 787 S.E.2d at 6.

38. *Id.* at 7–8.

39. *Id.* at 8. The court also endorsed the additional tests for admissibility of expert testimony provided in the advisory committee note to the 2000 amendment of Federal Rule 702. *Id.* at 10.

scrutinize expert testimony before admitting it.”⁴⁰ Whereas *Howerton* was “decidedly less . . . rigorous” than *Daubert*,⁴¹ the federal standard established, in the words of *Weisgram v. Marley*,⁴² “exacting standards of reliability.”⁴³

The Exclusion of the Expert Testimony in the McGrady Case Itself

Charles McGrady was charged with the first-degree murder of his cousin and neighbor James Shore. McGrady claimed that the killing was in self-defense. According to McGrady’s testimony, following a verbal altercation, Shore grabbed an AR-15 assault rifle from the golf cart in which McGrady and his son were riding and pointed it at McGrady’s son’s head.⁴⁴ McGrady pulled a Beretta pistol from his pocket, and, in 1.82 seconds⁴⁵ fired seven times at Shore. He hit Shore “four or five times in the front and side and twice in the back.”⁴⁶ The shots to the back were obviously problematic for McGrady’s self-defense claim, particularly since one of those shots to the back was the fatal shot that went through Shore’s lung and into his heart.⁴⁷

The testimony excluded in *McGrady* was that of Dave F. Cloutier, a use-of-force expert who the defense proposed to call as a witness. This expert sought to testify about average reaction times for study subjects to turn their bodies—turning 90 degrees in an average of 0.31 seconds and turning 180 degrees in an average time of 0.676 seconds.⁴⁸ He also reported an average of 0.365 seconds for study subjects to shoot with their finger already on the trigger and 0.677 seconds with the finger outside the trigger guard.⁴⁹ Cloutier cited a single study for the specific

40. *Id.*

41. *Id.* (quoting *Howerton v. Arai Helmet, Ltd.*, 597 S.E.2d 674, 690 (N.C. 2004).

42. 528 U.S. 440 (2000).

43. *McGrady*, 787 S.E.2d at 7 (quoting *Weisgram*, 528 U.S. at 455).

44. *Id.* at 4–5.

45. *Id.* at 13. McGrady recorded the audio of the incident on a tape recorder, *id.* at 4, which is the apparent source of the precise timing of the seven shots.

46. *Id.* at 5. The uncertainty in the number of shots that hit Shore resulted from the fact that some of the bullets entered the decedent’s arm and then reentered his torso, making it difficult to calculate an exact number of shots. *State v. McGrady*, 753 S.E.2d 361, 364 (N.C. Ct. App. 2014).

47. *McGrady*, 753 S.E.2d at 364.

48. Defendant’s Expert Report of Dave F. Cloutier at 13, *State v. McGrady*, 787 S.E.2d 1 (N.C. 2014) (Nos. 11CRS54425, COA13-330) [hereinafter Cloutier Report].

49. *Id.*; see also *McGrady*, 787 S.E.2d at 13.

average times given.⁵⁰ However, the testimony had two distinct parts. The first, which described the average time it took subjects to do a physical act—turn their bodies—that would have application to the victim, Shore. The second, which deals with the firing of the gun—a course of action that also includes perception, thinking, and action—that would have application to the defendant, McGrady.

Many of the studies cited by Cloutier involved police officers with special training as the subjects of the study, but one regarding the speed with which individuals can turn their bodies instead involved college students, most without firearms training.⁵¹ It reported similar average times to those given above.⁵² With regard to the actions that require perception, thought, and reaction, he cited a Federal Aviation Administration study of midair collision avoidance.⁵³

The trial court found Cloutier's testimony to be unreliable. The principal reason it cited—and the reason that the North Carolina Supreme Court approved—for exclusion of the testimony was that the defense expert had not provided the court with known or potential error rates for the studies on the reaction times that he used.⁵⁴ Another ground cited was that the expert had not considered variables in his testimony that the expert acknowledged could have affected the

50. Ernest J. Tobin & Martin L. Fackler, MD, *Officer Reaction-Response Times in Firing a Handgun*, 3 J. INT'L WOUND BALLISTICS ASS'N 6 (1997); see also Voir Dire Transcript of Dave Cloutier at 1148–49, *State v. McGrady*, 787 S.E.2d 1 (N.C. 2014) (Nos. 11CRS54425, COA13-330) [hereinafter Voir Dire Transcript]. Although this study was clearly given as the source of this data and a number of other studies were cited in Cloutier's report, see Cloutier Report, *supra* note 48, at 11–13, the Supreme Court erroneously referred to only two studies—one by the Federal Aviation Administration and another done with college students, which the expert's report indicated was written by William J. Lewinski. See *McGrady*, 787 S.E.2d at 14.

51. Cloutier Report, *supra* note 48, at 12–13.

52. That report is by Bill Lewinski, Ph.D., *Why is the Suspect Shot in the Back?*, POLICE MARKSMAN, Nov.–Dec. 2000, at 20, 25–27; Cloutier Report, *supra* note 48, at 13 n.30.

53. CIVIL AEROMEDICAL INST.—PHYSIOLOGICAL OPERATIONS, FED. AVIATION ADMIN., PHYSIOLOGICAL TRAINING-HIGH SPEED FLIGHT 24 (1972); see Cloutier Report, *supra* note 48, at 11–12 n.27; Voir Dire Transcript, *supra* note 50, at 1147–48, 1159 (describing a Los Angeles Police Department study regarding braking times to stop a vehicle once a danger was perceived).

54. See *McGrady*, 787 S.E.2d at 14. The trial judge also cited the issue of peer review. During the trial judge's questioning of Cloutier, he asked, “[d]id any doctor peer review your opinion in this case?” and received a negative answer from Cloutier. Voir Dire Transcript, *supra* note 50, at 1167. In ruling against admitting the expert testimony, the trial court began by stating that “Mr. Cloutier has not been the subject of peer review; at least nothing was brought forward to suggest that it has been.” *Id.* at 1189.

reactions times. The omitted variable was the defendant's back injury and recognized physical disability.⁵⁵

Did the Court Get the Narrow Issue of the Inadequacy of the Expert's Testimony Wrong?

While there may well have been substantial reasons to question other parts of the testimony that Cloutier would have provided, we have serious concerns about the correctness of the rationale and ruling excluding one part of it—the average times of study participants to turn their bodies and average times for other study participants to fire a weapon. It is not at all clear—particularly as applied to the average speed with which the study participants turned their bodies—that the judge's decision to exclude was correct because the defense expert failed to provide the court with known or potential error rates for the relevant studies. The secondary ground of failure to take into account the defendant's back injury and disability was closer to being correct, but likely also failed. As to error rate and average turning times, the criticism simply does not fit the type of test results involved. “The typical use of the term ‘error rate’ refers to the number of ‘mistakes’ a particular technique or method will make in some specific number of trials.”⁵⁶ This testimony was not predicting a particular result, but rather reporting average results from observations of human capacity or performance.

Moreover, the testimony about the studies was not part of an opinion by the expert of what happened in the case, but rather was for the purpose of helping the jury assess the plausibility of McGrady's testimony that the shots he fired while fearing for his and his son's life as Shore threatened them could have entered Shore's back as he turned away. During defense counsel's redirect of the expert, he clarified that Cloutier would not be offering an opinion as to the specific time it took McGrady to react or Shore to react or turn around.⁵⁷ The testimony regarding the studies was not predicting results but rather was showing human capacity to turn the body quickly and thereby giving the jurors information to assist them in judging McGrady's testimony. The judge apparently missed that this was the type of limited use of expertise that Judge Gertner approved in *United States v. Hines*. Such testimony was useful to the jury in evaluating handwriting and valid for that limited use, even though it was not valid if the expert were to go an additional

55. See *McGrady*, 787 S.E.2d at 14 (noting the trial court's reliance on the expert's failure to consider these conditions and stating that the defendant “had a back injury and a disability rating from the military”).

56. 1 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY §1:21, at 77 (2015–2016 ed.).

57. Voir Dire Transcript, *supra* note 50, at 1173.

step and render an opinion regarding the defendant's authorship of the "stickup" note.⁵⁸ Moreover, as Judge Gertner observed, such testimony is particularly useful where it informs jurors of information that conflicts with their prior common understanding.⁵⁹

The trial judge came much closer to a valid ground for excluding the average-turning-time evidence in his secondary argument that the expert failed to explain the impact of the defendant's physical disability and his back injury on the time it might have taken him to turn his body. The failure to consider an important variable on performance is a deficiency that undercuts the reliability of the evidence in a fashion similar to poor results where error rates are appropriate measures of validity. Professors John Meixner and Shari Diamond argue that error rate analysis plays a bigger role, particularly in exclusion of expert testimony, than scholars looking at results have generally noted.⁶⁰ They argue that explicit numerical error rates are often not available or appropriate, and as result, an error rate as an explicit test for admissibility appears infrequently in decided cases.⁶¹

Professors Meixner and Diamond contend that the concept of error rate should be more broadly conceived. They believe it should include, not only "the more explicit 'known' error, which can be evaluated simply by assessing a numerical value," but also "the more implicit 'potential' error, which can be assessed by examining the methodology and evaluating its potential for producing erroneous results."⁶² "An implicit error rate analysis might be characterized as an analysis in which the judge is attempting to discern the likely accuracy of the expert even if an error rate has not been explicitly provided."⁶³ They note that an expert not taking account of a critical feature of the case that differs from the study circumstances, similar to the defendant's back injury and disability, should be a basis for exclusion under this category of "implicit error rate."⁶⁴

58. See *supra* notes 12–16 and accompanying text.

59. See BROUN, MOSTELLER & GIANNELLI, *supra* note 1, at 657.

60. See John B. Meixner & Shari Seidman Diamond, *The Hidden Daubert Factor: How Judges Use Error Rates in Assessing Scientific Evidence*, 2014 WIS. L. REV. 1063, 1063 (2014).

61. The trial judge asked, "[d]id any of the studies you have cited account for an error rate for someone that has had a back injury in the past?" Voir Dire Transcript, *supra* note 50, at 1166.

62. Meixner & Diamond, *supra* note 60, at 1071.

63. *Id.* at 1089.

64. *Id.* at 1065–67 (describing a products liability case in which the expert's observation was after a change in the condition of the vehicle from its condition at the time of the accident, which the authors contend should be

Cloutier's suggested explanation that the effect of adrenalin would likely overcome the impact of a back injury or disability was insufficient.⁶⁵ However, while still a technically valid criticism, the failure to take into account the potential effect of a disability and a back injury on turning times is not significant when applied to the defendant. For the evidence to be helpful to the defendant, his reaction time in shooting needs to be slow in comparison to the victim's turning time. It is hard to imagine a situation where taking into account the defendant's physical limitations would speed up his reaction time. Rather it would likely have slowed his reaction time. Evidence is not excluded because it could have been more helpful to the party offering it if other factors were considered. Indeed, the prosecutor's first line of attack on this issue was Cloutier's failure to take into account the fact that the *victim* had had a broken back and Cloutier's failure to get access to the victim's medical records so he could consider this injury.⁶⁶ Had that failure been a ground for exclusion, the argument would have been much more powerful since the injury could well have slowed down the victim's turning time, which would have undercut the expert's testimony. However, the trial judge ignored the prosecutor's line of questioning and argument and focused only on the defendant's condition in his questioning of Cloutier and in his ruling excluding the testimony.⁶⁷

Another possible basis for exclusion was the failure of the expert to respond to the trial judge's question regarding error rates for reaction times. The expert was not prepared to answer and responded that he did not know. However, there were valid responses that he could have given.⁶⁸ There are some weaknesses in aspects of the research Cloutier

excluded because of likely error based on improper methodology and which they label "implicit error rate analysis").

65. See *State v. McGrady*, 787 S.E.2d 1, 14 (N.C. 2016).
66. Voir Dire Transcript, *supra* note 50, at 1163–65. In arguing for exclusion of Cloutier's testimony, the prosecutor asserted that evidence had been presented that the victim had a broken back. *Id.* at 1175–76.
67. *Id.* at 1165–67, 1190.
68. Cf. *McGrady*, 787 S.E.2d at 14 ("A trial judge could reasonably conclude that Mr. Cloutier's degree of unfamiliarity with these studies rendered his testimony about them, the conclusions about this particular case that he drew from them, unreliable."). The trial judge had an excessively broad view of the usefulness of error rates to determine reliability under *Daubert*. He asked the same error rate questions, not only about reaction times, but also to the use of force variables, perception of pre-attack cues, perception narrowing, and the effects of the "fight or flight" phenomenon. See Voir Dire Transcript, *supra* note 50, at 1170–71. Cloutier's response to every error rate question, including that of reaction time, was basically the same—that he did not know. *Id.* For the Lewinski study of college students used by Cloutier, which reported average turning times and quickest turning times for the twenty-five test subjects over five repetitions of each turning

utilized but not likely substantial enough to warrant exclusion of the reaction time testimony. While the *McGrady* case was pending in the North Carolina Supreme Court, the *New York Times* published an article describing exactly the type of testimony McGrady offered. But, the article discussed evidence presented on behalf of police officers accused in criminal and civil cases of unjustified shooting of suspects, often fleeing and sometimes shot in the back.⁶⁹ The article describes the testimony of psychology professor William J. Lewinski in defense of the officers.⁷⁰ Lewinski has enjoyed considerable success and notoriety.

In *McGrady*, Cloutier relied on two of Lewinski's articles.⁷¹ In terms of *Daubert* factors, Lewinski's research was not published in peer reviewed journals, but instead in a trade publication popular with the police.⁷² It also has an element of professional bias behind it, in that it grows out of research tied up in litigation that the expert benefits from, rather than research conducted independently from litigation.⁷³ Variants of these two criticisms also apply to the article by Tobin and Fackler, upon which Cloutier's specific reaction times are based.⁷⁴

procedure, the primary response should have been, as noted above, that error rate is inappropriate for reporting average performance times. As to the accuracy of the data reported, Lewinski described the mechanical recording and timing instruments used and stated that the "error factor in the timing is plus or minus 03/100ths of a second." See Lewinski, *supra* note 52, at 20. Similarly, the Tobin and Fackler article provides information on the degree of precision of the timing technology, and for the turning times of the study participants, it reports the mean, range, and standard deviation, but nothing about error rate. See Tobin & Fackler, *supra* note 50, at 7.

69. See Matt Apuzzo, *Training Officers to Shoot First, and He Will Answer Questions Later*, N.Y. TIMES (Aug. 1, 2015), https://www.nytimes.com/2015/08/02/us/training-officers-to-shoot-first-and-he-will-answer-questions-later.html?_r=0 [<https://perma.cc/G658-PQFA>].
70. *Id.*
71. Voir Dire Transcript, *supra* note 50, at 1140–41, 1161.
72. Apuzzo, *supra* note 69 (noting three Lewinski articles, all of which were published in THE POLICE MARKSMAN, "a popular magazine for [police] officers").
73. See FED. R. EVID. 702 advisory committee's note to 2000 amendment (describing the first of five additional tests set out in the note).
74. This JOURNAL OF THE INTERNATIONAL WOUND BALLISTICS ASSOCIATION article is similarly published in a trade magazine related to law enforcement—PUBLIC AGENCY TRAINING COUNCIL. See Tobin & Fackler, *supra* note 50. Like Lewinski, Tobin and Fackler have gained notoriety as experts whose work benefits charged police officers. See *Shot in the Back, Now What?*, PUB. AGENCY TRAINING COUNCIL, <http://www.patc.com/special/shotinback.shtml> [<https://perma.cc/A5VV-WDRW>] (last visited Feb. 11, 2018) (listing Tobin and Fackler along with Lewinski as doing

Finally, as to reaction times—particularly the speed with which study participants could turn their bodies, where the evidence was on the most solid ground—there may be an argument that exclusion was harmless on the facts of this case. McGrady fired seven rounds over a period of 1.82 seconds, with two of those rounds entering Shore’s back.⁷⁵ Without expert testimony, the jury could have understood that Shore would have been able to do substantial turning during those 1.82 seconds. How information on quickness of turning times would have aided the jury in evaluating the self-defense issue is arguably less clear, and, therefore, exclusion is arguably less significant under these facts than in other scenarios involving shorter time periods and fewer shots.

It appears that the trial judge and the North Carolina Supreme Court misapplied the error rate argument from *Daubert* in the *McGrady* case. That may be considered a somewhat technical error, but the change in the law as interpreted by the court requires rigorous scrutiny of reliability. When the North Carolina Supreme Court ruled that the enactment of amended Rule 702 meant a rigorous enforcement of *Daubert* admissibility rules, it presumably should have embraced with this enhanced rigor a companion responsibility of judicial accuracy in application of reliability concepts. Exclusion based on a rote and misapplied incantation of error rates or peer review,⁷⁶ particularly when rigorously enforced, should not be the new way that the reliability of expert testimony is judged in North Carolina.

These courts also made an additional legal error in failing to recognize that the expert in this instance was undertaking a different and more limited task of educating the jurors rather than giving an opinion about an outcome, and the education was for the purpose of correcting a likely societal misconception. The Supreme Court gave no attention to this different purpose and, perhaps more remarkably, did not note that the legislative amendment that brought *Daubert* analysis to North Carolina for the first time explicitly authorized expert testimony to instruct the jurors on relevant concepts to assist them in evaluating evidence. The 2011 amendment enacted by the North Carolina legislature—which incorporated the language of the 2000 federal amendment to Rule 702 that “codified” the expert testimony evaluation system of *Daubert* and its progeny—also added the words “or otherwise” to the rule in the language that authorized a qualified expert to “testify thereto in the form of an opinion, or otherwise”⁷⁷

ground breaking research helpful to officers charged in connection with shootings).

75. See *State v. McGrady*, 787 S.E.2d 1, 5 (N.C. 2016).

76. See *supra* note 54 and accompanying text.

77. N.C. GEN. STAT. ANN. § 8c-702 (West 2017).

As noted above, North Carolina Evidence Rule 702(a) on expert testimony, as originally enacted, differed from the Federal Rule 702 only in omitting the words “or otherwise” from the language of the federal rule.⁷⁸

The meaning of the omitted “or otherwise” language in the federal rule is explained by one paragraph of the advisory committee note to the original Federal Rule 702.⁷⁹ The explanation relates to the effort to eliminate the need to use a hypothetical question to elicit an expert opinion. One of the ways to eliminate the need to ask the question was not to elicit an opinion. Instead the expert “may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts.”⁸⁰ The Commentary to the original North Carolina Rule 702 provided no explanation for which the words were omitted, stating only the result. “This rule is identical to Fed. R. Evid. 702, except that the words ‘or otherwise’ which appear at the end of the federal rule after the word ‘opinion’ have been omitted.”⁸¹

78. See *supra* note 31 and accompanying text.

79. The committee’s note to Federal Rule of Evidence 702 states:

Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in non-opinion form when counsel believes the trier can itself draw the requisite inference. The use of opinions is not abolished by the rule, however. It will continue to be permissible for the experts to take the further step of suggesting the inference which should be drawn from applying the specialized knowledge to the facts. See Rules 703 to 705.

FED. R. EVID. 702 advisory committee’s note to 2000 amendment (2012).

80. *Id.*

81. N.C. GEN. STAT. ANN. § 8c-702 (West 2017). North Carolina Rule 705 differs from Federal Rule 705 in adding a final sentence that states: “There shall be no requirement that expert testimony be in response to a hypothetical question.” Compare *id.*, with FED. R. EVID. 705. Perhaps having eliminated the need to ask a hypothetical question through another provision, the invitation to this alternative type of expert testimony, which was in part at least designed to reduce the need for hypothetical questions, was seen as unnecessary.

Exclusion of Expert Evidence in a Criminal Case

The North Carolina experience with *Daubert* shows the sophistication and accuracy of Paul's analysis of how *Daubert* interacted with state evidence practice. However, one of his observations does not seem to fit. He stated that the new analysis did not have very much impact changing admissibility practices in criminal cases.⁸² *McGrady* would appear to be an exception. However, perhaps at least a partial explanation is that the evidence was offered by the defense and was not part of the class of historically accepted forensic evidence used by the prosecution and apparently little affected by *Daubert* despite the weakness of some types of that evidence. It will be interesting to see how Paul would treat this issue in the future if the *McGrady* case were to find its way into that note with a "but see" or "but cf." citation and its explanatory parenthetical.

II. PAUL GIANNELLI—WONDERFUL CO-AUTHOR AND COLLEAGUE

Paul has been an absolute delight to work with as a co-author. His work is, as described above, masterfully crafted. He was always willing to take on a different assignment than was his initial preference if needed to complete the project. His work was always completed well in advance of deadlines. Those aspects of responsibility went without saying.

Paul gave outstanding advice in improving the work in a number of ways overall. For example, when he first joined the book, he suggested that we provide descriptive headings globally for all our notes that followed the cases. It took only a couple minutes after the reaction "oh no, not more work" wore off for us to recognize that this was obviously an important improvement.

Beyond all his other outstanding attributes, Paul is a warm and giving person. He has a wonderful sense of humor. His presence on our project, and we must assume in many others, made it far more enjoyable than it would have been without him as our co-author, colleague, and friend.

We wish Paul all the best in his retirement.

82. See BROWN, MOSTELLER & GIANNELLI, *supra* note 1, at 648–49.