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Unpacking Frye-Mack: A Critical Analysis of Minnesota's Frye-Mack Standard for Admitting Scientific Evidence

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**UNPACKING *FRYE-MACK*: A CRITICAL ANALYSIS OF
MINNESOTA’S *FRYE-MACK* STANDARD FOR ADMITTING
SCIENTIFIC EVIDENCE**

Zach Alter[†]

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I. INTRODUCTION

“Any sufficiently advanced technology is indistinguishable from magic.”¹ As technology and science advance with increasing speed and scope, courts are tasked with increasingly difficult determinations on admissibility of evidence.² Using in-court experts to explain scientific methods has become necessary; however, this necessity carries the risk of tainting judges and juries with unreliable “junk science.”³ This problem demands a standard to balance the need for expert testimony against the corresponding risk of deception.

Over ninety years ago, in *Frye v. United States*,⁴ this demand was recognized. The court stated that “[s]omewhere in this twilight zone the evidential force of the principal must be recognized.”⁵ The *Frye* court held that novel scientific evidence must be “generally accepted” in its particular field to be admissible.⁶ Seventy years later, the United States Supreme Court rejected *Frye* as the appropriate test for federal courts and established the *Daubert* standard.⁷ This factor-based standard directs judges, as gatekeepers, to determine the reliability and relevance of the testimony.⁸

Minnesota courts presently stand in opposition to the majority of states, which have adopted the *Daubert* standard.⁹ Minnesota

1. ARTHUR C. CLARKE, *PROFILES OF THE FUTURE: AN INQUIRY INTO THE LIMITS OF THE POSSIBLE* 34 (1961).

2. See generally Carl H. Hanson, *When Science Is Too Daunting: Multiple Chemical Sensitivity, Federal Courts, and the Struggling Spirit of Daubert*, 11 VILL. ENVTL. L.J. 273 (2000) (discussing use of science in the courtroom and the troubles in applying novel scientific evidence in *Frye* and *Daubert* hearings).

3. See generally Joseph M. Price & Gretchen Gates Kelly, *Junk Science in the Courtroom: Causes, Effects, and Controls*, 19 HAMLINE L. REV. 395 (1996) (explaining the evolution of and current problem with junk science expert testimony).

4. 293 F. 1013 (D.C. Cir. 1923).

5. *Id.* at 1014.

6. *Id.*

7. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 579 (1993).

8. See *id.* at 597 (“We recognize that, in practice, a gatekeeping role for the judge, no matter how flexible, inevitably on occasion will prevent the jury from learning of authentic insights and innovations. That, nevertheless, is the balance that is struck by Rules of Evidence designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes.”).

9. See Heather G. Hamilton, Note, *The Movement from Frye to Daubert: Where Do the States Stand?*, 38 JURIMETRICS J. 201, 208–10 (1998) (discussing the aftermath effect of *Daubert* in state courts).

instead adheres to its own *Frye-Mack* test.¹⁰ However, amid continuing controversy and partisan lobbying, the Minnesota Supreme Court's Advisory Committee on the Rules of Evidence is currently soliciting input on whether to amend or abandon the *Frye-Mack* standard.¹¹

Part II of this Note examines the history of the *Frye* and *Daubert* standards, focusing on the evolution of Minnesota's *Frye-Mack* standard.¹² Part III analyzes Minnesota's *Frye-Mack* standard and identifies areas in which *Frye-Mack* has been inconsistently applied.¹³ In Part IV, this Note considers possible changes to *Frye-Mack*.¹⁴ Part V concludes that Minnesota courts would benefit from changes to *Frye-Mack* that clarify its application while retaining its uniform and deferential qualities.¹⁵

II. HISTORY

A. *Where It All Started: Frye v. United States*

In 1923, the District of Columbia Circuit Court of Appeals affirmed a trial court's exclusion of polygraph evidence in a murder trial.¹⁶ Finding the polygraph test insufficiently reliable, the court crafted a "general acceptance" test to scrutinize the unrecognized scientific methods.¹⁷ The test requires that "the thing from which the deduction is made must be sufficiently established to have gained *general acceptance* in the particular field in which it belongs."¹⁸

10. See, e.g., *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000) (rejecting *Daubert* and reaffirming adherence to the *Frye-Mack* standard).

11. Mike Mosedale, *Is Frye-Mack Toast? Committee Mulls Shift to Daubert Standard*, MINN. LAW. (July 21, 2016), <http://minnlawyer.com/2016/07/21/is-frye-mack-toast-committee-mulls-shift-to-daubert-standard/>.

12. See *infra* Part II.

13. See *infra* Part III.

14. See *infra* Part IV.

15. See *infra* Part V.

16. *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923). This case turned on admissibility of the then-novel systolic blood pressure deception test, a predecessor to the polygraph test. For a more in-depth explanation of *Frye* and polygraph testing, see Vincent V. Viglucci, *Calculating Credibility: State v. Sharma and the Future of Polygraph Admissibility in Ohio and Beyond*, 42 AKRON L. REV. 319, 321–22 (2009).

17. *Frye*, 293 F. at 1014.

18. *Id.* (emphasis added).

Frye's general acceptance test was initially unremarkable. Only a few dozen published cases cited *Frye* from 1923 until the 1960s.¹⁹ *Frye's* slow recognition is partially explained by the lack of novel forensic breakthroughs during this period.²⁰ Moreover, expert scientific evidence during this time was not commonly used in civil court proceedings.²¹ Its usage notwithstanding, the *Frye* general acceptance standard controlled the admissibility of novel scientific evidence for seventy years.²²

In 1975, largely in response to the “federalization” of criminal law,²³ the Federal Rules of Evidence were promulgated.²⁴ Federal Rule of Evidence 702 (FRE 702) applied to expert testimony previously subject to the *Frye* standard.²⁵ While FRE 702 made no mention of *Frye*, this silence was not an express rejection of *Frye*.²⁶

19. See David E. Bernstein, *Frye, Frye, Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS J. 385, 388 (2001).

20. *Id.* at 388–89.

21. *Id.* at 389. Courts did not apply *Frye* to a civil case until 1988 in a toxic tort case. *Id.* at 391. Before 1988, *Frye* was applied in forensic science applications in criminal trials. See Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197, 1205–06 (1980).

22. See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 585 (1993) (“In the 70 years since its formation in the *Frye* case, the ‘general acceptance’ test has been the dominant standard for determining the admissibility of novel scientific evidence at trial.”). However, beginning in the 1950s, the general acceptance standard became controversial. Chief among critics was Professor Charles McCormick. McCormick criticized *Frye* for not properly deciding issues of scientific fact and instead advocated for a more lenient “relevancy” approach. See Bernstein, *supra* note 19, at 389 (discussing McCormick’s “relevancy” theory as a replacement for *Frye*).

23. Bernstein, *supra* note 19, at 390.

24. See Act of Jan. 2, 1975, Pub. L. No. 93-595, 88 Stat. 1926. The Advisory Committee on the Federal Rules of Evidence, appointed by Chief Justice Earl Warren in 1965, worked for more than ten years to draft the rules before the rules were signed into law. *Id.*; see also Paul C. Giannelli, *Daubert: Interpreting the Federal Rules of Evidence*, 15 CARDOZO L. REV. 1999, 2003 (1994) (describing the development and enactment of the federal rules).

25. Federal Rule of Evidence 702, as originally promulgated, read: “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” 88 Stat. at 1937.

26. See *Daubert*, 509 U.S. at 589 (“That the *Frye* test was displaced by the Rules of Evidence does not mean, however, that the Rules themselves place no limits on the admissibility of purportedly scientific evidence.”).

During this period, the *Frye* test was applied more frequently and with less uniformity.²⁷

Because *Frye* still existed and differed from FRE 702's requirements, courts began to inconsistently apply the two standards to scientific evidence.²⁸ Some courts remained faithful to *Frye*, others applied FRE 702, some applied a merged version of the two, and still others applied a "relevancy" standard.²⁹

In the mid-1980s, *Frye* was shaken by an increase in toxic tort litigation.³⁰ An influx of causation-focused civil cases that hinged on the admissibility of expert witnesses triggered questions of *Frye*'s applicability.³¹ In response to this problem and in addition to the increase in novel scientific and technological methods, disagreement on standards arose between and among federal and state courts.³²

B. *Where It All Changed: The Daubert Trilogy*

The dispute between and among courts about the appropriate standard for expert testimony prompted the United States Supreme Court to step in.³³ In the 1990s, the Court decided three causation-

27. See Giannelli, *supra* note 24, at 2004 (discussing the inconsistency with which courts admitted evidence of voiceprint identifications, bite mark comparisons, and hypnotically-refreshed testimony). Compare *United States v. Addison*, 498 F.2d 741 (D.C. Cir. 1974) (rejecting voiceprint evidence for lack of general acceptance under *Frye*), with *United States v. Baller*, 519 F.2d 463 (4th Cir. 1975) (admitting voiceprint evidence and rejecting *Frye*'s applicability).

28. Bernstein, *supra* note 19, at 389–90.

29. *Id.* at 390.

30. See Michael D. Green, *Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of Agent Orange and Bendectin Litigation*, 86 NW. U. L. REV. 643, 661, 669 (1992) (describing how the "Agent Orange" product liability litigation expanded the scope of *Frye*'s concerns by acknowledging *Frye*'s relevance to prove causation in tort injury cases).

31. See generally David Bernstein, *Out of the Fryeing Pan and into the Fire: The Expert Witness Problem in Toxic Tort Litigation*, 10 REV. LITIG. 117 (1990) (discussing the problems with admissibility of expert testimony in the face of an increase in toxic tort litigation).

32. See Giannelli, *supra* note 24, at 2009–15 (discussing the various standards for admissibility used by courts in the 1970s and 1980s and noting disagreement between standards).

33. See *Daubert v. Merrell Dow Pharms, Inc.*, 509 U.S. 579, 582 (1993) ("In this case we are called upon to determine the standard for admitting expert scientific testimony in a federal trial.").

based tort cases that together permanently changed the landscape of scientific expert testimony.³⁴

In the 1993 case of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,³⁵ the United States Supreme Court attempted to resolve the conflict between *Frye* and FRE 702. The Court abandoned the *Frye* test, holding that general acceptance is not required to admit scientific evidence.³⁶ The Court reasoned that FRE 702's silence as to *Frye* was grounds for rejecting the standard.³⁷ The Court relied on the language of the Federal Rules to craft a new test.³⁸ The new "*Daubert* standard" envisioned judges acting as gatekeepers in charge of deciding admissibility of expert testimony based on principles of reliability.³⁹ To determine reliability, the *Daubert* standard directs trial courts to consider non-exclusive and non-dispositive factors including whether the theory or technique (1) can be tested, (2) has been subjected to peer review or publication, (3) has a known or potential rate of error, (4) has existing and maintained standards controlling the technique's operation, and (5) is generally accepted within the relevant scientific community.⁴⁰

In 1997, *General Electric Co. v. Joiner* reaffirmed and extended a trial court's broad discretion under *Daubert* by deeming "abuse of discretion" the appropriate standard of review for admitting scientific testimony.⁴¹ *Joiner* also allows courts to examine the reliability of an expert's reasoning process, not just the theory's general methodology.⁴² Two years later, *Kumho Tire Co. v. Carmichael* extended the *Daubert* standard to all expert testimony, not just

34. See Hamilton, *supra* note 9, at 206–10 (1998) (discussing the evolution from *Frye* to *Daubert* and the effect upon state courts after *Daubert* was decided).

35. 509 U.S. 579 (1993).

36. *Id.* at 597.

37. *Id.* at 588–89.

38. *Id.* at 591–92.

39. *Id.*

40. *Id.* at 593–94. Notably, *Frye*'s general acceptance standard is incorporated as a relevant factor in a *Daubert* analysis but, in contrast to *Frye*, is not a dispositive factor. *Id.*

41. 522 U.S. 136, 146 (1997).

42. See *id.* (“[C]onclusions and methodology are not entirely distinct from one another. . . . A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.” (citation omitted)).

scientific testimony.⁴³ *Daubert*, *Joiner*, and *Kumho Tire* together comprise the *Daubert* trilogy.⁴⁴

Trial lawyers and judges reacted strongly to *Daubert*. Civil plaintiff-side attorneys and criminal prosecutors—two sides commonly seeking to admit expert testimony—expressed disdain for *Daubert*.⁴⁵ While *Daubert* was intended to further the “liberal thrust” of the Federal Rules of Evidence,⁴⁶ opponents forecasted that *Daubert*’s discretionary and factor-based makeup was likely to cause increased scrutiny of experts, inconsistent rulings, and an increase in time and money⁴⁷ spent fighting over the admissibility of expert testimony.⁴⁸ In contrast, those who supported *Daubert* found that abandoning *Frye* was necessary to allow judges to apply a more

43. 526 U.S. 137 (1999).

44. See David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 JURIMETRICS J. 351, 351–57 (2004) (discussing the *Daubert* trilogy’s development and impact on *Frye*).

45. See Paul S. Milich, *Controversial Science in the Courtroom: Daubert and the Law’s Hubris*, 43 EMORY L.J. 913, 923–24 (1994) (noting that prosecutors and plaintiffs’ attorneys—each representing real victims—support *Frye* because of their reliance upon complete deference to the scientific community to decide admissibility of controversial scientific methods). *But see* Paul M. Barrett, *Justices Rule Against Business in Evidence Case—Restrictive Standard for Use of Scientific Testimony in Trials Is Struck Down*, WALL ST. J., June 29, 1993, at A3 (describing *Frye* as a test widely used to exclude scientific evidence from personal-injury and other trials).

46. See *Daubert v. Merrell Dow Pharms, Inc.*, 509 U.S. 579, 588 (1993) (quoting *Beach Aircraft Corp. v. Rainey*, 488 U.S. 153, 169 (1988)).

47. In 2016, Missouri Governor Jay Nixon vetoed Senate Bill 591, which sought to require that Missouri adopt *Daubert*. Hanna Nakano, *Legal Experts Differ on Mo. Governor’s Daubert Veto; Business Leader Says It Leaves Negative Mark on State*, MADISON-ST. CLAIR REC. (July 14, 2016, 6:36 AM), <http://madisonrecord.com/stories/510958596-legal-experts-differ-on-mo-governor-s-daubert-veto-business-leader-says-it-leaves-negative-mark-on-state>. Nixon argued in his veto that *Daubert* was a “complicated and costly procedure” that for victims would have “ma[de] it more expensive—and perhaps cost prohibitive—to bring forward their claims.” *Id.*

48. Interview with Michael Weiner, Senior Partner, Yaeger & Weiner, in Minneapolis, Minn. (Sept. 30, 2016) [hereinafter Weiner]. Product liability attorney Michael Weiner outlined these perceived problems with *Daubert*. *Id.* Mr. Weiner asserts that because the general acceptance test is more predictable and less commonly at issue, a switch to *Daubert* opens the door for defense attorneys to fight for exclusion of generally accepted expert testimony and for judges to weave personal opinions or political views into determinations. *Id.* Mr. Weiner also stated that *Frye-Mack* hearings, commonly held as pretrial motions in limine, are expensive to argue and more difficult to prepare for if general acceptance is merely one factor that a *Daubert* judge may consider. *Id.*

flexible and comprehensive standard to ever-evolving scientific advances while adhering to the updated Federal Rules of Evidence.⁴⁹

Several studies dulled the sharp predictions made by *Daubert* opponents. One study found no statistically significant difference in the rates at which cases were removed to federal court between states applying *Daubert* and those applying *Frye*.⁵⁰ Another study found “very little evidence that adoption of the *Daubert* trilogy ha[d] any systematic effect on whom is offered as an expert in state court disputes.”⁵¹ A third study found *Daubert* to have no impact on admission rates of expert testimony in criminal cases at either the trial or appellate court levels.⁵²

Other studies have shown that *Daubert* had a more notable effect. One study of *Daubert* found that civil defendants succeed in excluding nearly two-thirds of plaintiffs’ proffered expert testimony.⁵³ Another study found an early increase in the frequency with which challenged evidence is excluded⁵⁴ and a corresponding rise in the number of cases dismissed at the summary judgment stage.⁵⁵ This study posited that judges applying *Daubert* initially applied increased scrutiny while executing their new gatekeeping

49. See generally Lorie S. Gildea, *Sifting the Dross: Expert Witness Testimony in Minnesota After the Daubert Trilogy*, 26 WM. MITCHELL L. REV. 93, 105–10 (2000) (arguing that Minnesota should abandon *Frye-Mack* in favor of *Daubert*).

50. Edward K. Cheng & Albert H. Yoon, *Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards*, 91 VA. L. REV. 471, 511 (2005).

51. Eric Helland & Jonathan Klick, *Does Anyone Get Stopped at the Gate? An Empirical Assessment of the Daubert Trilogy in the States*, 20 SUP. CT. ECON. REV. 1, 33 (2012).

52. Jennifer L. Groscup et al., *The Effects of Daubert on the Admissibility of Expert Testimony in State and Federal Criminal Cases*, 8 PSYCHOL. PUB. POL’Y & L. 339, 364 (2002).

53. D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99, 108 (2000).

54. Lloyd Dixon & Brian Gill, *Changes in the Standards for Admitting Evidence in Federal Civil Cases Since the Daubert Decision*, 8 PSYCHOL. PUB. POL’Y & L. 251, 293 (2002) (finding that the percentage of challenged evidence excluded increased from 55% between July 1991 and June 1993 to 71% between July 1996 and June 1997).

55. *Id.* at 296 (finding an increase in the frequency with which summary judgment was granted when evidence was challenged from 21% between July 1989 and June 1993 to 48% between July 1995 and June 1997). Unlike the exclusion rates, the rates of summary judgment grants were not found to have subsided by the late 1990s. *Id.* at 294. This change could be due to broader litigation trends, but *Daubert* likely played a role in this occurrence. See *id.* at 295–96.

duties⁵⁶ but also found that the evidence exclusion rates receded back to pre-*Daubert* levels by 1999.⁵⁷

The increased scrutiny that initially occurred after *Daubert* may tell a more relevant story than the nominal net effect on exclusion rates. In examining the changes to attorney practices in federal civil cases post-*Daubert*, one study found that *Daubert* “appears to have encouraged [federal judges and attorneys] to take a more active role in scrutinizing proffered testimony.”⁵⁸ For example, post-*Daubert*, attorneys were more likely to have retained experts, scrutinized expert credentials, and become more involved in testimony preparation.⁵⁹ Correspondingly, more motions in limine to exclude experts were filed post-*Daubert*, and, if exclusion was granted, summary judgment motions often followed.⁶⁰ These findings support the conclusion that *Daubert* courts apply a stricter scrutiny to proffered expert testimony, which is precisely the argument against *Daubert* made by lawyers seeking to retain the objectivity inherent in *Frye*.⁶¹

In the first four years after *Daubert*, thirty-three states adopted *Daubert* or a comparable standard.⁶² Additionally, *Daubert* prompted all states to acknowledge that novel scientific testimony was subject to a *Frye* or *Daubert* test in civil cases, not just criminal cases.⁶³ As of 2001, the relevant standards used by states broke down approximately as follows: twenty-nine states applied *Daubert* or a similar test; six states applied the *Daubert* factors but did not reject *Frye*; sixteen states and the District of Columbia adhered to *Frye* or a similar test; and four states followed other standards.⁶⁴ Since 2001,

56. *Id.* at 298.

57. *Id.* at 293.

58. Carol Krafka et al., *Judge and Attorney Experiences, Practices, and Concerns Regarding Expert Testimony in Federal Civil Trials*, 8 PSYCHOL. PUB. POL’Y & L. 309, 330 (2002).

59. *See id.* at 329.

60. *Id.*

61. Weiner, *supra* note 48.

62. Hamilton, *supra* note 9, at 209.

63. Bernstein, *supra* note 19, at 394–95 (“After *Daubert*, no state has explicitly held that *Frye* is not applicable to evidence in products liability and toxic tort cases.”).

64. Alice B. Lustre, Annotation, *Post-Daubert Standards for Admissibility of Scientific and Other Expert Evidence in State Courts*, 90 A.L.R.5th 453 (2001).

several other states have accepted *Daubert* or a similar test, limiting *Frye* adherents to a slim minority.⁶⁵

C. *Minnesota's Standard*

1. *Pre-Goeb*

Minnesota originally applied *Frye* to scientific expert testimony.⁶⁶ In 1977, Minnesota adopted its own rules of evidence.⁶⁷ Minnesota's rules were modeled after the Federal Rules and included an identical version of FRE 702.⁶⁸ Minnesota Rule of Evidence 702 (MRE 702) did not mention *Frye* or its general acceptance test; its focus was on ensuring witness qualification and assisting triers of fact in formulating correct resolutions.⁶⁹

Three years after the Minnesota Rules were codified, the Minnesota Supreme Court decided *State v. Mack*.⁷⁰ In *Mack*, the court excluded testimony based on hypnotically refreshed recollection testimony under *Frye* but added a layer to the *Frye* standard by requiring that the proffered expert testimony "meet ordinary standards of reliability for admission."⁷¹ Thus, Minnesota's test became two-pronged: first, novel scientific evidence must be

65. See, e.g., ARIZ. R. EVID. 702; FLA. R. EVID. 90.702; MISS. R. EVID. 702; *Motorola, Inc. v. Murray*, 147 A.3d 751, 752 (D.C. 2016) (overturning *Frye* over ninety years after deciding it).

66. See *State v. Kolander*, 236 Minn. 209, 220–21, 52 N.W.2d 458, 465 (1952).

67. Order Promulgating the Rules of Evidence (Minn. Apr. 1, 1977), [http://www.mncourts.gov/mncourtsgov/media/AdministrativeFileArchive/Rules%20of%20Evidence%20ADM10-8047%20\(formerly%20C3-84-2138\)/1977-04-01-Order-Amending-Rls-of-Evid.pdf](http://www.mncourts.gov/mncourtsgov/media/AdministrativeFileArchive/Rules%20of%20Evidence%20ADM10-8047%20(formerly%20C3-84-2138)/1977-04-01-Order-Amending-Rls-of-Evid.pdf). The Minnesota Supreme Court Advisory Committee, which consisted of a variety of state judges and practitioners, drafted and proposed the Minnesota Rules of Evidence. *Id.* The preliminary comments to these Rules stated, "Unless there was a substantial state policy which required deviation from the federal rule, the committee recommended the federal rule of evidence exactly as enacted." Preliminary Comment, Order Promulgating Rules of Evidence Rule Commentary (Minn. Apr. 4, 1977), [http://www.mncourts.gov/mncourtsgov/media/AdministrativeFileArchive/Rules%20of%20Evidence%20ADM10-8047%20\(formerly%20C3-84-2138\)/1976-12-08%20Rls%20of%20Evid%20Proposed%20Amend.pdf](http://www.mncourts.gov/mncourtsgov/media/AdministrativeFileArchive/Rules%20of%20Evidence%20ADM10-8047%20(formerly%20C3-84-2138)/1976-12-08%20Rls%20of%20Evid%20Proposed%20Amend.pdf).

68. Penelope Harley, *Minnesota Decides: Goeb v. Tharaldson and the Admissibility of Novel Scientific Evidence*, 24 HAMLINE L. REV. 460, 492 (2001).

69. MINN. R. EVID. 702 advisory committee's comment to 1977 Order Promulgating the Rules of Evidence.

70. 292 N.W.2d 764 (Minn. 1980).

71. *Id.* at 772.

generally accepted in its relevant scientific community,⁷² and second, the evidence must have foundational reliability.⁷³

In the first years after *Daubert* was decided, the Minnesota Court of Appeals heard a number of cases that required choosing between *Daubert* and *Frye*.⁷⁴ However, because the Minnesota Supreme Court possessed the sole authority to amend the rules of evidence and had reaffirmed *Frye* as recently as 1989,⁷⁵ the Minnesota Court of Appeals declined to apply *Daubert* in these cases.⁷⁶ Into the late 1990s, Minnesota courts remained largely faithful to *Frye-Mack* without any express rejection of *Daubert*.⁷⁷

2. *The Goeb Decision*

In 2000, the Minnesota Supreme Court considered whether to abandon *Frye* in favor of *Daubert*.⁷⁸ The case, *Goeb v. Tharaldson*, was a toxic tort battle hinging on causation, much like *Daubert*.⁷⁹ After becoming ill from an insecticide, the plaintiffs filed suit against the insecticide's manufacturer and applicator.⁸⁰ At trial, the plaintiffs sought to introduce expert testimony to substantiate their causation argument.⁸¹ The district court granted the defendants' motion to

72. See *State v. Moore*, 458 N.W.2d 90, 97–98 (Minn. 1990).

73. See *id.*

74. See, e.g., *K.B. v. Evangelical Lutheran Church in Am.*, 538 N.W.2d 152, 157 n.1 (Minn. Ct. App. 1995); *State v. Alt*, 504 N.W.2d 38, 46 (Minn. Ct. App. 1993) (noting that *Daubert*'s persuasive force in Minnesota may be strengthened by the fact that Minnesota Rules of Evidence are modeled after the federal rules); *State v. Goldstein*, 505 N.W.2d 332, 342 n.5 (Minn. Ct. App. 1993).

75. See *State v. Schwartz*, 447 N.W.2d 422, 424 (Minn. 1989) (citing *Frye-Mack*'s more objective and uniform rulings as justification for adhering to the standard).

76. See *Alt*, 504 N.W.2d at 46 (“It is for our supreme court, not this court, to decide *Daubert*'s impact in Minnesota.”).

77. See, e.g., *Goeb v. Tharaldson*, 615 N.W.2d 800, 812 (Minn. 2000) (noting that Minnesota courts have, to date, refused to abandon *Frye-Mack*); *State v. Hodgson*, 512 N.W.2d 95, 98 (Minn. 1994) (acknowledging *Daubert*'s repudiation of *Frye* in the federal sphere but refusing to address *Daubert*'s relevance in Minnesota law). *But see* *Fairview Hosp. & Health Care Servs. v. St. Paul Fire & Marine Ins. Co.*, 535 N.W.2d 337, 340 n.4 (Minn. 1995) (implying that *Daubert* was applicable in the court's analysis of expert testimony); *State v. Bloom*, 516 N.W.2d 159, 161–64 (Minn. 1994) (applying a *Daubert*-style reliability test to determine admissibility of DNA evidence).

78. *Goeb*, 615 N.W.2d at 809.

79. *Id.* at 803–05.

80. *Id.* at 805.

81. *Id.*

exclude the expert testimony because, under *Frye-Mack*, the expert's methodologies were neither generally accepted nor reliable.⁸²

The Minnesota Supreme Court's analysis in *Goeb* acknowledged *Frye-Mack*'s criticisms. First, the court stated that the general acceptance standard may wrongly "exclude cutting-edge but otherwise demonstrably reliable, probative evidence."⁸³ Second, the court recognized that *Frye-Mack* "improperly defers to scientists the legal question of admissibility of scientific evidence."⁸⁴ Third, the court noted that *Frye-Mack* fails to define the "relevant scientific community" and fails to define or quantify general acceptance.⁸⁵ Finally, the court conceded that adhering to *Frye-Mack* prevents uniformity with the Federal Rules of Evidence.⁸⁶

Nonetheless, the *Goeb* court combatted these criticisms and reaffirmed *Frye-Mack*.⁸⁷ The court first noted that no significant advancements in Minnesota case law or Rules of Evidence suggest any problem with *Frye-Mack* sufficient to justify a change.⁸⁸ Next, the court expressed concern that *Daubert*, by allowing judges substantial discretion, would lead to inconsistent district court rulings only correctable if abuse of discretion is proven.⁸⁹ The court believed that this discretion to decide disputes between qualified scientists on complex scientific issues was beyond the proper scope of judicial authority or capability.⁹⁰ Ultimately, seeking objective and uniform rulings and seeing little problem with Minnesota's status quo, the court in *Goeb* rejected *Daubert* and reaffirmed adherence to *Frye-Mack*.⁹¹

82. *Id.* at 808–09.

83. *Id.* at 812.

84. *Id.*

85. *Id.* at 813.

86. *See id.*

87. *Id.* at 814.

88. *Id.*

89. *Id.*

90. *Id.* at 813.

91. *Id.* at 814.

3. *Post-Goeb*

Many of the initial cases following *Goeb* worked to determine thresholds for general acceptance⁹² and foundational reliability.⁹³ This struggle was not new; the same struggles were aptly articulated over eighty years prior when the *Frye* Court observed, “Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized”⁹⁴

Additionally, Minnesota courts worked to determine which types of scientific evidence remained “novel” and which standard was appropriate for “non-novel” evidence. For example, in *State v. MacLennan*,⁹⁵ the Minnesota Supreme Court analyzed whether to apply *Frye-Mack* to social science evidence about battered child syndrome.⁹⁶ The court distinguished social science evidence, which explains an individual’s behavior, from physical science evidence, which instead involves a test or diagnosis.⁹⁷ This distinction led the court to apply a standard MRE 702 analysis instead of *Frye-Mack*.⁹⁸

In 2006, the Minnesota Supreme Court amended MRE 702 to codify *Goeb*.⁹⁹ The language of MRE 702 made the *Mack* foundational reliability prong applicable to all expert testimony but limited the *Frye* general acceptance prong to “opinion or evidence involv[ing] novel scientific theory.”¹⁰⁰ In doing so, the court intentionally declined to define what constituted reliable foundation, novel

92. Compare *State v. Traylor*, 656 N.W.2d 885, 893 (Minn. 2003) (deeming the PCR-STR method of testing DNA to clearly be generally accepted and reasoning that decisions of other jurisdictions are relevant to a *Frye-Mack* analysis), with *State v. Roman Nose*, 649 N.W.2d 815, 821–23 (Minn. 2002) (holding that the PCR-STR method is not generally accepted simply because other courts have ruled it so and is thus considered a novel scientific technique subject to a *Frye-Mack* test).

93. Compare *State v. Bailey*, 677 N.W.2d 380, 399–400 (Minn. 2004) (holding insufficient the trial court’s conclusion that DNA results were foundationally reliable based on the DNA Advisory Board standards), with *Traylor*, 656 N.W.2d at 897 (holding that the DNA Advisory Board standards are appropriate for judging foundational reliability of DNA testing).

94. *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923).

95. 702 N.W.2d 219 (Minn. 2005).

96. *Id.* at 230–33.

97. *Id.* at 232–33.

98. *Id.* at 233.

99. See MINN. R. EVID. 702 advisory committee’s comment to 2006 amendment.

100. MINN. R. EVID. 702.

scientific evidence, or general acceptance.¹⁰¹ Courts acknowledged this rule change and ignored the general acceptance prong when the technique producing the evidence was no longer considered novel.¹⁰² In 2007, the court clarified that novel scientific evidence under MRE 702 applies only to “evidence based on emerging scientific techniques.”¹⁰³

In 2011, the Minnesota Supreme Court, in *State v. Obeta*,¹⁰⁴ outlined a version of Minnesota’s then-current standard for admitting expert testimony: (1) the witness must be qualified as an expert, (2) the expert’s opinion must have foundational reliability, (3) the expert testimony must be helpful to the trier of fact, and (4) the testimony must satisfy the *Frye-Mack* test if it involves a novel scientific theory.¹⁰⁵ Prong four, as articulated by *Goeb*, is itself two-pronged. Prong four requires that the proponent of expert testimony premised on a novel scientific technique establish that, first, the theory or technique is generally accepted in the relevant scientific field, and, second, “the test itself is reliable and that its administration in the particular instance conformed to the procedure necessary to ensure reliability.”¹⁰⁶

Obeta’s standard caused confusion by discussing foundational reliability in parts two and four of the test.¹⁰⁷ In 2012, the Minnesota Supreme Court attempted to clarify this discrepancy in *Doe v. Archdiocese of St. Paul & Minneapolis*.¹⁰⁸ In *Doe*, the plaintiff argued that the district court erred by applying the *Frye-Mack* foundational reliability test to evidence of repressed memory instead of a general

101. See *Goeb v. Tharaldson*, 615 N.W.2d 800, 813 (Minn. 2000) (“Further, because the law is continuously evolving, answers to these questions will be set forth in case law as the issues properly present themselves.”); see also MINN. R. EVID. 702 advisory committee’s comment to 2006 amendment.

102. See, e.g., *State v. Hull*, 788 N.W.2d 91, 103–04 (Minn. 2010); *State v. Roman Nose*, 649 N.W.2d 815, 819 (Minn. 2002).

103. *Jacobson v. \$55,900 in U.S. Currency*, 728 N.W.2d 510, 528 (Minn. 2007) (quoting *State v. Jobe*, 486 N.W.2d 407, 419 (Minn. 1992)).

104. 796 N.W.2d 282 (Minn. 2011).

105. *Id.* at 289.

106. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000) (citing *State v. Moore*, 458 N.W.2d 90, 98 (Minn. 1990)). *But see State v. Hill*, 871 N.W.2d 900, 904 n.3 (Minn. 2015) (holding that *Frye-Mack* applies to all scientific evidence, not just novel techniques, but that the focus should be on the foundational reliability prong if general acceptance is not at issue).

107. See *Obeta*, 796 N.W.2d at 289.

108. 817 N.W.2d 150 (Minn. 2012).

foundational reliability test.¹⁰⁹ The court avoided deciding whether *Frye-Mack* was appropriate¹¹⁰ and instead concluded that the district court's *Frye-Mack* foundational reliability test was substantially the same as the foundational reliability test articulated in MRE 702.¹¹¹ Since *Doe* in 2012, the Minnesota Supreme Court has made no major changes to *Frye-Mack*.¹¹²

III. ANALYSIS: UNRESOLVED QUESTIONS WITH *FRYE-MACK*

This Note analyzes Minnesota court decisions to identify and explain three presently unresolved questions with *Frye-Mack*: (1) what constitutes a novel scientific theory,¹¹³ (2) what is general acceptance,¹¹⁴ and (3) what is the proper analysis under the foundational reliability prong.¹¹⁵ This analysis seeks to highlight evolving inconsistencies with the *Frye-Mack* standard for admitting expert testimony.¹¹⁶

109. *Id.* at 166.

110. *Id.* at 165 (“[I]f we conclude that the district court properly excluded Doe’s evidence under one of the first three parts of [MRE 702], we need not consider whether the theory of repressed and recovered memory is subject to the *Frye-Mack* standard.”). *But see id.* at 178 (Anderson, J., dissenting) (agreeing with the court of appeals that *Frye-Mack* is not the appropriate analytical framework for evaluating the admissibility of the proffered expert testimony).

111. *See id.* at 169 (majority opinion) (“Nominally, the district court conducted a *Frye-Mack* foundational reliability analysis, but its conclusions and findings on the theory . . . were a *de facto* Rule 702 analysis.”).

112. However, in 2015, the Minnesota Supreme Court articulated yet another iteration of *Frye-Mack*. In *State v. Hill*, the court made no mention of the “novel” requirement. 871 N.W.2d 900, 904 n.3 (Minn. 2015). Instead, the court stated that when general acceptance is conceded, courts must focus on the second prong, which requires proof “that the generally accepted methodology ‘produced reliable results in the specific case.’” *Id.* (quoting *State v. Bailey*, 677 N.W.2d 380, 397–98 (Minn. Ct. App. 2004)).

113. *See infra* Section III.A.

114. *See infra* Section III.B.

115. *See infra* Section III.C.

116. MINN. R. EVID. 702 is titled “Testimony by Experts,” but its language also includes references to “opinion” and “evidence.” Case law has followed this pattern. Accordingly, this Note uses expert “evidence,” “testimony,” and “opinion” interchangeably to refer to subject matter governed by *Frye-Mack* or MRE 702. Moreover, because so much of *Frye-Mack* and MRE 702’s effect is felt at the trial court level, this analysis will discuss several published and unpublished district court and appellate court decisions that are not themselves precedential.

A. *What Is Novel Scientific Theory Under MRE 702?*

Frye's general acceptance requirement for novel expert testimony was intended, in part, to guard against junk science.¹¹⁷ Science is complex, fast-evolving, and full of genuine disagreement on the validity of methodologies and conclusions upon which judges and juries heavily rely.¹¹⁸ Experts can now be retained to support a party's position on almost any issue.¹¹⁹ Controversial theories to support expert opinions are commonplace.¹²⁰ Some of these controversial theories are newly-developed, others have long been controversial, but all present problems for a judge who is uneducated on the subject matter.¹²¹ How can a court balance helpful expert testimony against the risk of admitting unreliable expert testimony? *Frye* answers this question by distinguishing novel scientific theory from non-novel theory, requiring general acceptance of the former but not the latter.¹²² Naturally, the question becomes: what is novel?

Minnesota Rule of Evidence 702 plainly limits the general acceptance requirement to opinions or evidence involving novel scientific theory.¹²³ A finding of novel scientific theory, then, is a prerequisite to analysis of general acceptance.¹²⁴ In *Frye*, the court created this "novel" label to describe the lack of precedent regarding admissibility of the scientific technique at issue.¹²⁵ The *Frye* court also noted that the "novel" label describes the newness of the

117. See generally Price & Kelly, *supra* note 3 (examining the problem of and possible solutions to junk science in the courtroom).

118. See Hanson, *supra* note 2, at 286.

119. See David Sonenshein & Charles Fitzpatrick, *The Problem of Partisan Experts and the Potential for Reform Through Concurrent Evidence*, 32 REV. LITIG. 1, 3–15 (2013) (discussing the use of scientific experts in the courtroom and the related problem of bias).

120. *Id.* at 25 (discussing the controversial nature of litigation-driven research).

121. See Milich, *supra* note 45, at 924–26.

122. See *Goeb v. Tharaldson*, 615 N.W.2d 800, 809 (Minn. 2000).

123. MINN. R. EVID. 702. ("[I]f the opinion or evidence involves novel scientific theory, the proponent must establish that the underlying scientific evidence is generally accepted in the relevant scientific community.")

124. See *id.*

125. *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923) ("Counsel for defendant, in their able presentation of the novel question involved, correctly state in their brief that no cases directly in point have been found.")

technique.¹²⁶ Novel stems from the theory's lack of precedent and lack of proven validity.¹²⁷

Minnesota has long applied its own *Frye-Mack* standard, which is intended to help judges make uniform decisions by letting the scientific community determine the theory's scientific merit.¹²⁸ While *Frye-Mack* judges are to rely on scientists to decide the acceptance and reliability of the science, it is up to judges to make the initial determination that the scientific theory at issue is novel and thus subject to *Frye-Mack*.¹²⁹ This undertaking can be broken down into two interrelated but separable questions: (1) what is novel, and (2) what is scientific theory.

1. *What Is Novel Under MRE 702?*

The comments to the 2006 amendment to MRE 702 state that “[t]he rule does not define what is novel, leaving this for resolution by the courts.”¹³⁰ In 2007, the Minnesota Supreme Court held that *Frye-Mack* applies to “evidence based on emerging scientific techniques.”¹³¹ Minnesota courts have not clarified when techniques are no longer emerging or novel, but have commonly applied two approaches.

The first approach to analyzing the applicability of *Frye-Mack* is to use “general acceptance” as the standard for judging whether a technique is novel. *Zandi v. Wyeth* illustrates this approach.¹³² In *Zandi*, the plaintiff sought to introduce into evidence the results of a rarely used test to prove that the defendant pharmaceutical company's hormone therapy caused the plaintiff's breast cancer.¹³³ The court reasoned that the test was novel because the test was

126. *Id.* (“Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define.”).

127. *See id.*

128. *See* Goeb v. Tharaldson, 615 N.W.2d 800, 813 (Minn. 2000).

129. *See* State v. Roman Nose, 649 N.W.2d 815, 821 (Minn. 2002) (holding that a pretrial hearing on the first *Frye-Mack* prong is needed unless the court has reviewed and confirmed the evidence's general acceptance).

130. MINN. R. EVID. 702 advisory committee's comment to 2006 amendment.

131. Jacobson v. \$55,900 in U.S. Currency, 728 N.W.2d 510, 528 (Minn. 2007) (quoting State v. Jobe, 486 N.W.2d 407, 419 (Minn. 1992)).

132. No. 27-CV-06-6744, 2007 WL 3224242 (Minn. Dist. Ct. Oct. 15, 2007).

133. *See id.* at *4, *8.

“clearly not generally accepted in the scientific community for the purpose for which it is here proffered.”¹³⁴

This approach makes a judge’s determination more objective.¹³⁵ Minnesota Rule of Evidence 702 implies a two-step approach: (1) determine whether a novel scientific theory is at issue, and if so, (2) analyze general acceptance.¹³⁶ Using general acceptance as the threshold for novelty may save a step in this analysis. If a judge is asked whether a technique is novel and it is not clear, then determining that the technique is generally accepted answers questions steps one and two simultaneously. If no instructive precedent guides the “novel” determination but the evidence arguably triggers *Frye-Mack*, then diving into general acceptance is the logical solution.

However, this approach creates confusion. Essentially, MRE 702 and *Frye-Mack* ask “the question: When is a novel scientific test not a novel scientific test[?]”¹³⁷ Under the above analysis, “the answer is: when it is ‘generally accepted.’”¹³⁸ However, this approach ignores the language in MRE 702. The first question being asked in *Frye-Mack* under MRE 702 is whether the opinion or evidence involves a novel scientific theory.¹³⁹ The answer to this question matters. If yes, then the proponent must prove general acceptance,¹⁴⁰ an expensive endeavor typically requiring the proponent to hire more experts.¹⁴¹ If not, then the proponent need only prove the other MRE 702 requirements.¹⁴² But, if the court conflates novelty with general

134. *Id.* at *23; *see also* Doe v. Archdiocese of St. Paul & Minneapolis, No. 62-C9-06-003962, 2009 WL 5576242, at *2 n.1 (Minn. Dist. Ct. Dec. 8, 2009) (ruling that repressed memory research was subject to *Frye-Mack* because it “has never been scrutinized under the *Frye-Mack* standard as being generally accepted within the relevant scientific community”), *rev’d*, 801 N.W.2d 203 (Minn. Ct. App. 2011), *rev’d*, 817 N.W.2d 150 (Minn. 2012).

135. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000).

136. MINN. R. EVID. 702.

137. Amicus Curiae Brief for Minnesota Trial Lawyers Association at 38, *Goeb v. Tharaldson*, 615 N.W.2d 800 (Minn. 2000) (No. CX-98-2275), 1999 MN S. Ct. Briefs LEXIS 3, at *38.

138. *Id.*

139. MINN. R. EVID. 702.

140. *See id.*

141. *See* 11 PETER N. THOMPSON, MINNESOTA PRACTICE SERIES: EVIDENCE § 703.04 (4th ed. 2016) (noting that *Frye-Mack* hearings are expensive and time consuming for parties involved).

142. *See id.* (scrutinizing the expert opinion for foundational reliability).

acceptance, then the language in MRE 702 becomes less meaningful and the evidence rightly subject to *Frye-Mack* becomes less clear.

A second approach used by lower courts to define novelty is to rely on Minnesota appellate court precedent. Under this approach, a technique is no longer novel, and thus no *Frye-Mack* hearing is required, once Minnesota's appellate courts "ha[ve] reviewed and confirmed the general acceptance of a scientific technique."¹⁴³ Trial courts define this inquiry narrowly: if general acceptance has not been expressly confirmed for the precise technique at issue, then the technique remains novel.¹⁴⁴ For example, in *State v. Edstrom*,¹⁴⁵ the Minnesota Court of Appeals found a *Frye-Mack* hearing necessary despite acceptance and admission of the scientific technique in other contexts.¹⁴⁶ Similarly, the trial court in *Peterson v. Progressive Contractors, Inc.*¹⁴⁷ stated that "[a] technique may be considered 'novel' if it differs from older techniques and has never been considered by the appellate courts."¹⁴⁸

143. *State v. Roman Nose*, 649 N.W.2d 815, 821 (Minn. 2002). The court in *Roman Nose* discredited the State's argument that general acceptance in other jurisdictions is sufficient to deem the evidence not novel in Minnesota courts. *Id.* at 820–22. The court stated that this approach "would be a departure from our precedent requiring a *Frye-Mack* hearing to determine general acceptance within the relevant scientific community." *Id.* at 820. However, courts have also struggled when the technique does not plainly appear to be novel in any sense but has yet to be ruled so by Minnesota courts. For example, in *State v. Edwards*, the court was tasked with interpreting whether gunshot residue evidence was generally accepted. *See* No. 55-K4-06-414, 2006 WL 6626516, at *1 (Minn. Dist. Ct. Dec. 7, 2006) (explaining that a *Frye-Mack* hearing was held on the admissibility of the gunshot residue during the court trial). Without any express *Frye-Mack* precedent on the technique at issue, the court excluded the evidence based on precedent from other jurisdictions and a 1974 Minnesota Supreme Court general discussion of the technique. *Id.* at *2–9.

144. *See Roman Nose*, 649 N.W.2d at 822 (holding that general acceptance of one method of DNA testing does not provide proper justification to conclude general acceptance of a sufficiently different technique of DNA testing).

145. 792 N.W.2d 105 (Minn. Ct. App. 2010).

146. *Id.* at 110 (holding that, while the scientific technique at issue, gas headspace chromatography, had been admitted and analyzed by previous Minnesota courts in other contexts and was arguably not novel, there was no district court error in finding the evidence novel); *see also State v. Zanter*, No. K3-00-1789, 2002 WL 34437339, at *5 (Minn. Dist. Ct. Dec. 30, 2002) (involving "the novel question of whether mitochondrial DNA identification evidence is admissible in Minnesota courts").

147. No. 71-CV-07-1295, 2008 WL 8487936 (Minn. Dist. Ct. Aug. 4, 2008).

148. *Id.* (citing *Roman Nose*, 649 N.W.2d at 821).

This precedent-based approach, by definition, relies on appellate courts to rule on a case's merits to create precedent upon which lower courts can rely. District court findings are not sufficient.¹⁴⁹ Unfortunately, Minnesota's high courts have neglected this duty on occasion.¹⁵⁰ Justice Meyer recognized that the Minnesota Supreme Court "do[es] a disservice to district courts and the administration of criminal justice in this state by declining to decide the issue on its merits."¹⁵¹ Because lower courts rely so greatly on precedent, appellate courts' failure to rule on case merits may result in scientific techniques remaining novel until a subsequent determination is made. This may lead to more *Frye-Mack* hearings on the same purportedly novel theories, resulting in less uniform decisions and increased expense.¹⁵² Because *Goeb* emphasized uniformity as justification for retaining *Frye-Mack*,¹⁵³ this presents cause for concern.

2. *What Is Scientific Theory Under MRE 702?*

The question of novelty differs slightly from the problem of determining what categories of testimony are scientific under MRE 702 and *Frye-Mack*. "A *Frye-Mack* hearing is only necessary when the

149. The dissent in *Roman Nose* recognized this, stating that the majority ignored three recent district court findings of general acceptance when it instead required a hearing unless the supreme court has confirmed the scientific technique. 649 N.W.2d at 824–25 (Gilbert, J., dissenting).

150. See, e.g., *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150, 165 (Minn. 2012) ("Therefore, if we conclude that the district court properly excluded Doe's evidence under one of the first three parts of [MRE 702], we need not consider whether the theory of repressed and recovered memory is subject to the *Frye-Mack* standard."); *State v. Obeta*, 796 N.W.2d 282, 294 n.9 (Minn. 2011) ("We express no opinion on whether a *Frye-Mack* hearing is necessary in order to admit expert testimony on typical rape-victim behaviors."); *State v. Hull*, 788 N.W.2d 91, 104 (Minn. 2010) (refusing to rule on the admissibility of fingerprint evidence under *Frye-Mack* because any error committed in admitting the evidence was harmless).

151. *Hull*, 788 N.W.2d. at 108 (Meyer, J., concurring); see also *Jacobson v. \$55,900 in U.S. Currency*, 728 N.W.2d 510, 534 (Minn. 2007) (Hanson, J., concurring) ("[T]he court did not address the issue relevant to a *Frye-Mack* test, namely, whether the theories . . . were generally accepted in the scientific community.").

152. See 11 THOMPSON, *supra* note 141 (noting that courts' refusal to decide issues on the merits may cause an increase in time-consuming and expensive *Frye-Mack* hearings).

153. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000).

evidence at issue was obtained using a technique that is *both* scientific and novel.”¹⁵⁴ The Minnesota Supreme Court has referred to “scientific” evidence under MRE 702 as evidence based on a “scientific process, principle, technique or device.”¹⁵⁵

The Minnesota Supreme Court distinguished scientific evidence from traditional expert testimony due to its potential to mislead triers of fact uneducated in science.¹⁵⁶ In *State v. MacLennan*,¹⁵⁷ the court accurately described this dilemma by deeming a *Frye* test “appropriate when the experimental, mechanical or theoretical nature of the scientific evidence ha[s] the potential to mislead lay jurors awed by an aura of mystic infallibility surrounding scientific techniques, experts and the fancy devices employed.”¹⁵⁸ This background guides analysis of two related questions. First, what is to be done with testimony that is not “scientific” in a traditional sense? Second, does the purpose for which the testimony is being proffered change *Frye-Mack*’s applicability?

In answering question one, courts find no guidance from *Goeb* or MRE 702.¹⁵⁹ The Minnesota Supreme Court has stated that *Frye-Mack* is inapplicable when no variety of physical or “hard science” is involved.¹⁶⁰ Examples of non-scientific theories include drug dog-sniffs,¹⁶¹ ten-point gang identification criteria,¹⁶² and parenting assessments in child protection matters.¹⁶³ Courts have also held arguably scientific evidence to not trigger *Frye-Mack* if what is truly being challenged is a formula, calculation, or process. Examples include expert testimony regarding retrograde extrapolation mathematical formulas,¹⁶⁴ use of an amount of electrical resistance

154. *State v. Edstrom*, 702 N.W.2d 105, 109 (Minn. Ct. App. 2010) (emphasis added) (citing *State v. Klawitter*, 518 N.W.2d 577, 585 (Minn. 1994)).

155. *Jacobson*, 728 N.W.2d at 529 (quoting *State v. Roscoe*, 700 P.2d 1312, 1320 (Ariz. 1984)).

156. *See Goeb*, 615 N.W.2d at 812–13.

157. 702 N.W.2d 219 (Minn. 2005).

158. *Id.* at 232 (quoting *State v. Borrelli*, 629 A.2d 1105, 1110 (Conn. 1993)).

159. *See* MINN. R. EVID. 702 (applicable to all scientific, technical, or other specialized knowledge); *Goeb*, 615 N.W.2d at 814 (holding *Frye-Mack* applicable to novel scientific theories).

160. *Jacobson*, 728 N.W.2d at 528–29.

161. *Id.*

162. *State v. Deshay*, 645 N.W.2d 185, 191 (Minn. Ct. App. 2002) (holding ten-point gang identification criteria to not be scientific in a *Frye-Mack* sense).

163. *In re Welfare of the Children of S.E.N. & R.D.J., Jr.*, No. A15-2009, 2016 WL 2946278, at *6 (Minn. Ct. App. May 23, 2016).

164. *State v. Jensen*, 482 N.W.2d 238, 239 (Minn. Ct. App. 1992).

on a dairy cow,¹⁶⁵ and the process of converting an analog signal into a digital signal.¹⁶⁶

Unlike traditional scientific theory involving physical scientific tests, social science theories and research techniques have clumsily been subject to *Frye-Mack*.¹⁶⁷ In 1991, the Minnesota Supreme Court declined to decide whether expert psychological testimony should be examined under *Frye-Mack*.¹⁶⁸ Later, the court in *MacLennan* declined to categorize expert testimony on battered child syndrome as a scientific theory, stating that “expert testimony on syndromes, unlike DNA evidence or other physical science, is not the type of evidence that the analytic framework established by *Frye-Mack* was designed to address.”¹⁶⁹ Conversely, the court earlier held that hypnotically refreshed testimony was subject to *Frye*, despite not being mechanical or scientific in nature.¹⁷⁰

In answering question two—whether the purpose for which the evidence is proffered has any bearing on admissibility—there is a similar lack of instruction from Minnesota precedent. The *MacLennan* court drew a distinction between “scientific evidence derived from a specific test or diagnosis and expert testimony that offers an explanation for a person’s behavior.”¹⁷¹ The court stated that experts testifying about a scientific theory to help a jury understand conduct differs from testimony regarding physical science being used to prove whether a party suffers from a condition.¹⁷² While the *MacLellan* court fell on the side of admitting syndrome evidence,¹⁷³ the supreme court has also excluded

165. *Poppler v. Wright Hennepin Coop. Elec. Ass’n*, 834 N.W.2d 527, 541 (Minn. Ct. App. 2013) (clarifying that the expert’s use of 200 ohms “is the result of scientific tests applying scientific techniques that are based on scientific theory,” but is not itself a scientific theory).

166. *State v. Brown*, 739 N.W.2d 716, 722 (Minn. 2007).

167. *See State v. MacLennan*, 702 N.W.2d 219, 230 n.2 (Minn. 2005).

168. *State v. Kraushaar*, 470 N.W.2d 509, 513 (Minn. 1991).

169. *MacLennan*, 702 N.W.2d. at 233. Courts have likewise not applied *Frye-Mack* to battered woman’s syndrome evidence. *See, e.g.*, *State v. Grecinger*, 569 N.W.2d 189 (Minn. 1997) (allowing battered woman’s syndrome evidence to explain a victim’s delay in reporting the crime); *State v. Hennem*, 441 N.W.2d 793 (Minn. 1989) (allowing the evidence to prove self-defense); *State v. Plantin*, 682 N.W.2d 653 (Minn. Ct. App. 2004) (allowing the evidence to assist a jury in understanding a victim’s justification for recanting a story).

170. *State v. Mack*, 292 N.W.2d 764, 768 (Minn. 1980).

171. *MacLennan*, 702 N.W.2d at 232–33.

172. *Id.*

173. The *MacLennan* court said that while syndrome evidence was admissible, it

syndrome evidence being offered to explain a condition if the evidence is not necessary for the jury to decide the dispute.¹⁷⁴

This distinction regarding the testimony's purpose was again addressed by the Minnesota Supreme Court in *Doe v. Archdiocese of St. Paul & Minneapolis*.¹⁷⁵ In *Doe*, the plaintiffs sought to introduce experts solely to explain the general condition of repressed memory to help the jury understand the victim's conduct and testimony.¹⁷⁶ The experts were not intending to testify that the plaintiff suffered from repressed memory syndrome but to assist the trier of fact in its determinations.¹⁷⁷ The court acknowledged this distinction in its foundational reliability analysis but declined to address whether the fact that the testimony was limited to general background had any bearing on the appropriate standard to be used.¹⁷⁸

In contrast to Minnesota courts, federal courts governed by *Daubert* need not wrestle with questions of novelty or scientific theory. *Kumho Tire* rendered these distinctions irrelevant by extending *Daubert's* applicability to all expert testimony.¹⁷⁹ The Supreme Court recognized that "no clear line" distinguishes scientific evidence from other specialized knowledge in a way that is capable of application in particular cases.¹⁸⁰ This recognition highlights the difficulty in requiring a court using *Frye* to determine whether a novel scientific theory is at issue before applying the general acceptance test.¹⁸¹

The lack of guidance on how a court must determine whether expert testimony is subject to *Frye-Mack* is problematic. In cases

also had to be relevant. *Id.* at 230. While the supreme court found that the district court erred in applying the *Frye-Mack* standard, the supreme court then turned to whether there was reversible error and found that the proof MacLellan submitted did "not support the admission of the expert testimony on battered child syndrome." *Id.* at 234–35.

174. See *State v. Saldana*, 324 N.W.2d 227, 230 (Minn. 1982) ("Rape trauma syndrome is not a fact-finding tool, but a therapeutic tool [which] does not assist the jury in its fact-finding function . . .").

175. See Respondent's Brief and Addendum, *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150 (2012) (No. A10-1951), 2011 WL 8815649, at *20 ("In the case of behavioral or social science testimony that is offered to explain certain conduct, . . . the *Frye* test is inapplicable to such evidence.").

176. *Id.* at *17–18.

177. *Id.* at *17.

178. See *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d at 168.

179. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149 (1999).

180. *Id.* at 148.

181. See *id.*

involving social science or syndrome evidence, the lack of guidance is particularly problematic—evidence is needed to explain behavior that could otherwise appear irrational to a juror.¹⁸² If Minnesota desires to retain *Frye-Mack*, then the Minnesota Supreme Court would best achieve *Frye-Mack*'s goals by articulating a standard under which trial courts could more consistently decide to which testimony *Frye-Mack* applies.¹⁸³

B. What Is General Acceptance Under MRE 702?

For opinions or evidence involving novel scientific theory, “the proponent must establish that the underlying scientific evidence is *generally accepted* in the *relevant scientific community*.”¹⁸⁴ The general acceptance requirement for novel scientific theory represents a principal difference between *Frye-Mack* and *Daubert*. In *Frye-Mack*, general acceptance, if required, is dispositive (i.e., failure to prove general acceptance is fatal to any expert testimony that the court finds to involve a novel scientific theory).¹⁸⁵ Conversely, under *Daubert*, general acceptance is merely one factor that may bear on admissibility.¹⁸⁶

Goeb stated that *Frye-Mack*'s general acceptance requirement “ensures that the persons most qualified to assess the scientific validity of a technique have the determinative voice.”¹⁸⁷ Instead of forcing judges to become amateur scientists,¹⁸⁸ judges under *Frye-Mack* defer to the relevant scientific community to gauge whether the theory's acceptance has reached the necessary threshold.¹⁸⁹ Despite ultimately reaffirming *Frye-Mack*, the *Goeb* court recognized three potentially problematic questions left unanswered in a *Frye-Mack* test: (1) whether the court must look to general acceptance of the technique or of the underlying scientific principle, (2) who is the relevant scientific community, and (3) what threshold meets general

182. See Peter B. Knapp, *The Other Shoe Drops: Minnesota Rejects Daubert*, 27 WM. MITCHELL L. REV. 997, 1022 (2000) (noting the need to articulate a standard for admissibility of “social framework” testimony).

183. See *id.*

184. MINN. R. EVID. 702 (emphasis added).

185. See *id.*

186. See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 594 (1993).

187. *Goeb v. Tharaldson*, 615 N.W.2d 800, 813 (Minn. 2000).

188. See *Daubert*, 509 U.S. at 601 (Rehnquist, C.J., concurring in part, dissenting in part).

189. See *Goeb*, 615 N.W.2d at 813.

acceptance.¹⁹⁰ This Note will address each of these question in turn to analyze whether courts since *Goeb* have provided any useful answers.

1. *General Acceptance of What?*

Frye initially required general acceptance of the technique and the underlying theory.¹⁹¹ Later, the Minnesota Supreme Court stated that general acceptance applies to the scientific technique or principle at issue.¹⁹² The court also stated that scientific testing is not a prerequisite for proving general acceptance,¹⁹³ implying that general acceptance of the underlying theory or principle, rather than the scientific test itself, may suffice. The court has also described the general acceptance prong as asking “whether experts in the field widely share the view that the results of the scientific testing are scientifically reliable.”¹⁹⁴ These interpretations subtly but significantly vary and together reveal the difficulty in determining what precisely must be generally accepted under *Frye-Mack*.

In *Zandi v. Wyeth*,¹⁹⁵ the trial court demanded that a very narrow proposition be generally accepted.¹⁹⁶ The scientific theory being proffered was that the defendant’s hormone therapy caused the plaintiff’s breast cancer.¹⁹⁷ The plaintiff, seeking to prove general acceptance of the underlying scientific theory, introduced a multitude of corroborating studies and the results of a differential diagnosis.¹⁹⁸ While the plaintiff argued that the studies showed long-term hormone therapy to be the predominant cause of breast cancer, the court was not convinced.¹⁹⁹ In holding the studies insufficient to prove general acceptance, the court articulated the specific deficiency in the plaintiff’s argument:

190. *Id.*

191. *See* *United States v. Alexander*, 526 F.2d 161, 163 (8th Cir. 1975).

192. *Sentinel Mgmt. Co. v. Aetna Cas. & Sur. Co.*, 615 N.W.2d 819, 824 (Minn. 2000).

193. *Id.* at 827.

194. *State v. Roman Nose*, 649 N.W.2d 815, 819 (Minn. 2002).

195. No. 27-CV-06-6744, 2007 Minn. Dist. LEXIS 12 (Minn. Dist. Ct. Oct. 15, 2007), *aff’d*, No. A08-1455, 2009 WL 2151141 (Minn. Ct. App. July 21, 2009).

196. *See id.* at *12.

197. *See id.* at *3.

198. *See id.* at *13.

199. *See id.* at *20–21 (“[T]he Court can find no support for the proposition that [hormone therapy] is the ‘predominant cause’ of breast cancer in a woman who has taken [hormone therapy] for 17 years.”).

[T]he “thing from which the deduction is made” is the proposition that [hormone therapy] causes breast cancer; the “deduction” which is made from the “thing” is the conclusion that [hormone therapy] caused Plaintiff’s particular cancer. . . . [E]ven if Plaintiff could show that the “thing from which the deduction is made” was generally accepted in the scientific community, Plaintiff’s proposition is not a “thing” from which to make the deduction the Doctors propose to make.

In this case, the “thing” from which the Doctors could deduce the probable cause of Plaintiff’s cancer would be a scientific methodology allowing a doctor to determine, in hindsight, the likely causes of breast cancer in an individual woman. Plaintiff has provided no evidence of any such methodology.²⁰⁰

In *Zandi*, then, the district court required that the specific proposition on which the plaintiff’s argument relied be generally accepted, not the general underlying scientific theory.²⁰¹ On appeal, the Minnesota Court of Appeals affirmed the decision, stating that “Zandi fail[ed] to demonstrate that there is a method for diagnosing the cause of an individual’s breast cancer that is generally accepted in the relevant scientific community.”²⁰²

In contrast, a set of cases very similar to *Zandi*, collectively titled *In re Prempro Products Liability Litigation v. Wyeth*,²⁰³ was argued under *Daubert*. At a bellwether trial, the federal district court found the defendants liable for the plaintiff’s breast cancer and awarded the plaintiff compensatory damages.²⁰⁴ The district court applied *Daubert* to admit testimony from the plaintiff’s expert witness to support

200. *Id.* at *36–38.

201. Telephone Interview with Stuart L. Goldenberg, Senior Partner, Goldenberg Law (Oct. 24, 2016) [hereinafter Goldenberg]. Product liability attorney Stuart Goldenberg described how *Zandi* has affected the way judges apply *Frye-Mack*. Mr. Goldenberg stated that civil defense attorneys occasionally cite to *Zandi* to argue that *Frye-Mack* should exclude any causation-dependent evidence that requires a differential diagnosis. However, he stated that it is uncommon for a judge to apply an analysis as stringently as the court did in *Zandi*. He further noted that proving causation in cases where the harm caused is cancer is an endeavor in which plaintiff-side attorneys commonly struggle.

202. *Zandi v. Wyeth*, No. A08-1455, 2009 WL 2151141, at *9 (Minn. Ct. App. July 21, 2009).

203. 586 F.3d 547 (8th Cir. 2009).

204. *Id.* at 553.

causation.²⁰⁵ On appeal at the Eighth Circuit, the court found that the expert's differential diagnosis sufficiently established that the defendants' hormones were necessary to the development of the plaintiff's tumor.²⁰⁶ Accordingly, the court rejected the defendants' argument that the plaintiff's expert's methodology was neither sound nor accepted.²⁰⁷

This comparison supports the contention that *Daubert* represents a "relax[ation of] the traditional barriers to 'opinion' testimony."²⁰⁸ While *Daubert* and *Frye-Mack* both focus on scrutiny of the evidence's methodology,²⁰⁹ the analysis under *Daubert* gives less weight to the general acceptance finding.²¹⁰ Moreover, *Daubert*, unlike *Frye-Mack*, does not entirely limit a court's scrutiny to methodology.²¹¹ This flexibility allows a *Daubert* court to consider a broader range of evidence to meet a less stringent admissibility standard.²¹² As the Eighth Circuit noted, "[t]here is no single requirement for admissibility as long as the proffer indicates that the expert evidence is reliable and relevant."²¹³ If, as seen in *Zandi*, the "underlying scientific evidence" in MRE 702 is interpreted to mean the exact proposition being asserted, then *Frye-Mack's* general acceptance requirement appears to make *Frye-Mack* a stiffer standard than *Daubert*.²¹⁴

205. *See id.* at 565.

206. *Id.* at 565–66. The *Prempro Products* court went on to distinguish its holding from *Zandi*, stating, "To the extent that *Zandi* excludes an expert opinion that relies on differential diagnosis to determine the cause of hormone-receptor-positive breast cancer in an individual with hormone-dependent breast cancer, we respectfully disagree." *Id.* at 567 n.13.

207. *Id.* at 567. Instead, the *Wyeth* court justified inclusion of the evidence because the defendants "had the opportunity to expose the testimony's weaknesses through vigorous cross-examination and the presentation of contrary evidence." *Id.* (citing *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 596 (1993)).

208. *Daubert*, 509 U.S. at 588 (quoting *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 169 (1988)).

209. *Id.* at 592–93.

210. *Id.* at 593–95 (discussing the factors a court may consider under *Daubert*).

211. *Compare* *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (allowing a judge to consider the link between evidence and proffered opinion), *with* *Goeb v. Tharaldson*, 615 N.W.2d 800, 815 (Minn. 2000) (limiting scrutiny to methodology).

212. *See Daubert*, 509 U.S. at 592–93.

213. *In re Prempro Prod. Liab. Litig. v. Wyeth*, 586 F.3d 547, 565 (8th Cir. 2009) (quoting *Unrein v. Timesavers, Inc.*, 394 F.3d 1008, 1011 (8th Cir. 2005)).

214. The Eighth Circuit disagreed with *Zandi's* exclusion of the evidence and noted that "Minnesota law requires a more conservative review of expert testimony

The *Zandi* decision, as compared to *In re Prempro Products Liability Litigation*, is a clear example in which *Frye-Mack* proved more demanding than *Daubert* because of how narrowly general acceptance was interpreted.²¹⁵ However, some attorneys would argue that the lack of Minnesota precedent consistent with *Zandi* tells a different story.²¹⁶ Under this argument, *Zandi* represents an exception to the idea that *Frye-Mack* is a tamer standard to which evidence is consistently applied without substantial dispute.²¹⁷ Whether or not *Zandi* represents the *Frye-Mack* rule or its exception, *Zandi* illuminates how determining what must be generally accepted under *Frye* can significantly alter the admissibility determination.

than the liberal thrust of the Federal Rules of Evidence.” *Id.* at 567 n.13 (distinguishing *Zandi v. Wyeth*, No. A08-1455, 2009 WL 2151141 (Minn. Ct. App. July 21, 2009)).

215. *Zandi*, 2009 WL 2151141, at *5–12. Analysis of fibromyalgia testimony provides another example in which *Daubert*'s flexible and discretionary standard resulted in courts admitting evidence that *Frye-Mack* excluded. Compare *Epp v. Lauby*, 715 N.W.2d 501, 511 (Neb. 2006) (holding under a *Daubert* standard that evidence sufficiently supported a theory of a causal relationship between physical trauma and fibromyalgia), and *Reichert v. Phipps*, 84 P.3d 353, 356, 364 (Wyo. 2004) (holding under *Daubert* that a trial court abused its discretion by excluding evidence linking an auto accident to fibromyalgia), with *Grant v. Boccia*, 137 P.3d 20, 25 (Wash. Ct. App. 2006) (excluding under *Frye* testimony linking trauma and fibromyalgia per lack of general acceptance of a causal relationship between trauma and fibromyalgia in the scientific community). But see *Maras v. Avis Rent a Car Sys., Inc.*, 393 F. Supp. 2d 801, 810–11 (D. Minn. 2005) (applying *Daubert* to exclude testimony proffered to establish that an auto accident aggravated fibromyalgia).

216. While not being litigated in Minnesota, recent decisions in the Johnson & Johnson Talcum Powder litigation resulted in *Daubert* proving tougher than *Frye*. In St. Louis Circuit Court, Missouri, which applies a *Frye-Mack*-like standard, three cases have survived challenges to expert testimony and have resulted in hundreds of millions in damages. See Nassim Benchaabane, *St. Louis Jury Awards \$70 Million to Woman Claiming Baby Powder Products Contributed to Her Cancer*, ST. LOUIS POST-DISPATCH (Oct. 28, 2016), http://www.stltoday.com/business/local/st-louis-jury-awards-million-to-woman-claiming-baby-powder/article_6bfaef72-4dc6-50a3-af24-fe91944b79e6.html. Conversely, a New Jersey state court applied a standard closer to *Daubert* in excluding the plaintiff's experts and ultimately dismissing two talcum powder lawsuits against Johnson & Johnson. See Kenneth Bradley, *Johnson & Johnson Beats 2 Suits Claiming Talc Caused Cancer*, 34 WESTLAW J. TOXIC TORTS 1, 4 (2016).

217. Goldenberg, *supra* note 201. This author spoke with Mr. Goldenberg about the *Zandi* and *In re Prempro Products Liability Litigation* decisions. Mr. Goldenberg believed *Zandi* to be the rare case in which a judge required general acceptance of such a precise proposition and argued that the lack of supportive case law reveals how infrequently general acceptance is fatal to expert testimony.

2. *Who Is the Relevant Scientific Community?*

Minnesota Rule of Evidence 702 requires that evidence admitted under the novel scientific theory be generally accepted in the relevant scientific community.²¹⁸ Disagreement exists as to whom this community encompasses because the community may include practitioners, researchers, and others with knowledge, many of whom may have a personal stake in the case outcome.²¹⁹

Minnesota is one of the vast majority of states whose courts agree that the relevant scientific community extends beyond practitioners.²²⁰ Minnesota courts have interpreted *Frye* to allow all experts in the scientific field to be included in the relevant scientific community.²²¹ This interpretation can cut both ways—favoring plaintiffs and defendants depending on the evidence at issue—but reveals how the result may change if a court manipulates the margins of the relevant community.²²² While *Frye* intended to defer entirely to the relevant scientific community, a court’s definition of relevant scientific community clearly is discretionary and can shape a *Frye* hearing’s outcome.²²³ Despite this possibility, Minnesota’s broad approach does not appear to have caused glaring problems with *Frye-Mack*.

218. MINN. R. EVID. 702.

219. See generally Simon A. Cole, *Out of the Daubert Fire and into the Fryeing Pan? Self-Validation, Meta-Expertise and the Admissibility of Latent Print Evidence in Frye Jurisdictions*, 9 MINN. J. L. SCI. & TECH. 453, 473–80 (2008) (discussing the differing views on and consequences of how courts define “relevant scientific community”).

220. See, e.g., *United States v. Alexander*, 526 F.2d 161, 164 n.6 (8th Cir. 1975) (rejecting the contention that polygraph evidence need only be generally accepted by polygraph operators); *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150, 161 (Minn. 2012) (discussing the relevant scientific community to include clinicians and researchers).

221. See *State v. Fenney*, 448 N.W.2d 54, 60 (Minn. 1989) (“Minnesota’s interpretation of *Frye* requires ‘experts in its field’ and has no such narrow requirement of disinterestedness.”); see also *State v. Dixon*, 822 N.W.2d 664, 674 (Minn. Ct. App. 2012) (defining the relevant scientific community as “experts in the field”).

222. See *State v. Coon*, 974 P.2d 386, 397 (Alaska 1999) (noting that *Frye* has been criticized for its tendency to allow a court to manipulate relevant scientific field to shape general acceptance).

223. See Cole, *supra* note 219, at 473 (discussing how the definition of the relevant scientific community can shape a *Frye* determination in voice spectrography cases).

3. *When Is a Theory Generally Accepted?*

Even if the relevant scientific community is identified, just when that community has generally accepted a theory remains unclear. The *Goeb* court elected not to define general acceptance, instead leaving future case law to make determinations as “issues properly present themselves.”²²⁴ In defining this threshold, courts have held that experts in the field must widely share the view.²²⁵ However, courts have said that general acceptance “requires neither unanimity nor acceptance outside its particular field”²²⁶ and that courts may receive input on this inquiry from other jurisdictions.²²⁷

The boundaries of the general acceptance threshold are explorable, though unsatisfyingly not revealed, by analyzing the recent case law on repressed memory syndrome. In *C.A.H. v. Holden*,²²⁸ the trial court was charged with determining whether repressed memory syndrome satisfied the *Frye-Mack* standard for the specific purpose of tolling a statute of limitations in a sexual abuse case.²²⁹ Applying a straightforward analysis, the court found repressed memory to be generally accepted in the relevant scientific community because the syndrome was included in the DSM-IV.²³⁰

In 2009, the year before *C.A.H.* was decided, the Minnesota district court in *Doe v. Archdiocese of St. Paul & Minneapolis* issued an opposite ruling.²³¹ In *Doe*, a parishioner brought negligence and fraud claims against the archdiocese for the archdiocese’s role in alleged sexual abuse by one of its priests.²³² As in *C.A.H.*, the central question in *Doe* was whether the plaintiff could introduce general expert testimony regarding memory repression and recovery to toll

224. *Goeb v. Tharaldson*, 615 N.W.2d 800, 813 (Minn. 2000).

225. *State v. Kromah*, 657 N.W.2d 564, 565 n.2 (Minn. 2003).

226. *Fenney*, 558 N.W.2d at 58.

227. *Id.* at 61.

228. *C.A.H. v. Holden*, No. 73-CV-09-7108, 2010 WL 6566538 (Minn. Dist. Ct. Dec. 15, 2010).

229. *Id.*

230. *Id.* The DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, “is a book of diagnoses and criteria published by the American Psychiatric Association and is based on professional consensus in the field of psychology.” *Id.* (internal quotations omitted).

231. *Doe v. Archdiocese of St. Paul*, No. 62-C9-06-003962, 2009 WL 5576242 (Minn. Dist. Ct. Dec. 8, 2009), *rev’d*, 801 N.W.2d 203 (Minn. Ct. App. 2011), *rev’d*, 817 N.W.2d 150 (Minn. 2012).

232. *Id.*

a statute of limitations.²³³ The plaintiff's two experts and the defendant's three experts were quickly deemed representative of the relevant scientific community,²³⁴ but serious debate existed between the two sides regarding the syndrome's validity. Some clinicians accepted that repressed and recovered memory was a valid theory and supported its diagnosis in the DSM-IV.²³⁵ Conversely, researchers communicated deep concerns with the theory and argued that the plaintiff failed to distinguish the theory from an ordinary person forgetting and later remembering an idea.²³⁶ Due to this lack of consensus, the court excluded the evidence, finding that "something cannot be both controversial and generally accepted."²³⁷

The Minnesota Court of Appeals reversed, finding *Frye-Mack* inapplicable because repressed memory evidence involved "[n]o 'method' . . . for general acceptance or non-acceptance by the scientific community."²³⁸ By taking this route, the court of appeals shed no light on whether repressed memory was generally accepted.

The Minnesota Supreme Court likewise eluded answering the general acceptance question. The court neither accepted nor rejected the district court's conclusion that evidence cannot be highly controversial and generally accepted.²³⁹ The court reasoned that *Frye-Mack* need not be applied if the evidence can be excluded under any of the first three parts in MRE 702.²⁴⁰ Accordingly, the court affirmed the district court's exclusion of the evidence under the foundational reliability prong and performed no formal *Frye* analysis.²⁴¹

233. *Id.* The experts were not intending to testify about the plaintiff specifically; instead, the experts intended only to testify generally about repressed memory condition to help the jury understand the plaintiff's conduct and testimony. Respondent's Brief and Addendum, *Doe*, 817 N.W.2d 150 (No. A10-1951), 2011 WL 8815649, at *17-18.

234. *Doe*, 2009 WL 5576242 at *8.

235. *See id.* The DSM-IV "is a tool used mainly by clinical psychologists and psychiatrists . . . to diagnose mental illness." *Doe*, 817 N.W.2d at 161 n.4.

236. *Doe*, 2009 WL 5576242 at *24-25.

237. *Id.* at *22.

238. *Doe v. Archdiocese of St. Paul & Minneapolis*, 801 N.W.2d 203, 207 (Minn. Ct. App. 2011), *rev'd*, 817 N.W.2d 150.

239. *See Doe*, 817 N.W.2d at 165.

240. *Id.*

241. *Id.*

The inconsistency between *C.A.H.* and each of the three *Doe* decisions rekindles the debate underlying *Goeb*'s holding. The trial court in *Doe* noted considerable uncertainty regarding repressed memory's general acceptance.²⁴² "Since the purpose of a *Frye-Mack* hearing is so the court is not called upon to play the role of scientist, the court defers resolution of this great debate to the relevant scientific community"²⁴³ Was *Frye-Mack* intended to preclude any reliability or helpfulness inquiry if the defendant's experts convinced the trial court that the evidence was not generally accepted? If not, would a more discretionary analysis by a *Daubert* judge deliver a different outcome?

Under *Daubert*, the district court's analysis in *Doe* would have differed. Controversy within the scientific community does not necessarily exclude the evidence under *Daubert*.²⁴⁴ Under *Daubert*, each judge faced with novel scientific evidence must perform "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether the reasoning or methodology properly can be applied to the facts in issue."²⁴⁵ This assessment may allow "shaky but admissible" testimony attackable by cross-examination, contrary evidence, and careful jury instruction.²⁴⁶ Under this discretionary *Daubert* test, several courts have admitted the same repressed memory testimony that *Doe* excluded.²⁴⁷

242. *Doe v. Archdiocese of St. Paul & Minneapolis*, No. 62-C9-06-003962, 2009 WL 5576242 at *24–25 (Minn. Dist. Ct. Dec. 8, 2009) ("The court is struck by the deep controversy surrounding the question of whether or not repressed and recovered memory is a real psychiatric condition or a much more natural process involving something closer to a process of normal forgetting."), *rev'd*, 801 N.W.2d 203, *rev'd*, 817 N.W.2d 150.

243. *Id.* at *25.

244. See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 597 (1993) ("'General acceptance' is not a necessary precondition to the admissibility of scientific evidence under the Federal Rules of Evidence").

245. *Goeb v. Tharaldson*, 615 N.W.2d 800, 811 (Minn. 2000) (quoting *Daubert*, 509 U.S. at 592–93).

246. *Daubert*, 509 U.S. at 596.

247. See, e.g., *Clark v. Edison*, 881 F. Supp. 2d 192 (D. Mass. 2012); *Shahzade v. Gregory*, 923 F. Supp. 286 (D. Mass. 1996) (finding repressed memory to satisfy the requisite validity and reliability under the *Daubert* standard); *Isely v. Capuchin Province*, 877 F. Supp. 1055 (E.D. Mich. 1995) (denying defendant's motion to exclude testimony concerning repressed memory syndrome under the *Daubert* standard). But see *Hunter v. Brown*, No. 03A01-9504-CV-00127, 1996 WL 57944 (Tenn. Ct. App. 1996) (excluding repressed memory evidence under *Daubert*

Whether or not the evidence in *Doe* should have been admitted, the Minnesota Supreme Court in *Doe* created more questions than it answered. *Frye-Mack* was intended to achieve uniformity among district courts.²⁴⁸ The discrepancy between *C.A.H.* and *Doe* reveals the difficulty of achieving this end. However, the varying district court decisions are less problematic than the uncertainty present after the Minnesota Supreme Court's ruling in *Doe* did not resolve the question of general acceptance based on inclusion in the DSM-IV or of the theory in general.²⁴⁹ The *Doe* trial court found no general acceptance of the same theory due to controversy,²⁵⁰ the *Doe* appellate court found general acceptance irrelevant because the science was not subject to *Frye-Mack*,²⁵¹ and the *Doe* supreme court gave no answer on general acceptance but found the evidence foundationally unreliable.²⁵² To further complicate things, the *Doe* supreme court's foundational reliability analysis seemed to include consideration of general acceptance, which further complicates *Frye-Mack*.²⁵³ A trial court determining general acceptance of repressed memory, or similar social science evidence, has little more guidance after *Doe* than before it. Ultimately, the Minnesota Supreme Court's failure in *Doe* to decide general acceptance sets an unstable precedent that fails to carry out *Frye-Mack*'s uniformity objective.

C. *What Does Foundational Reliability Entail?*

In most cases, the disputed evidence is not novel and is generally accepted, thus the case centers on foundational reliability.²⁵⁴

because it is too contradictory), *aff'd on other grounds*, 955 S.W.2d 49 (1997).

248. *Goeb*, 615 N.W.2d at 814.

249. *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150, 161 n.5, 170 n.8 (Minn. 2012).

250. *Doe v. Archdiocese of St. Paul & Minneapolis*, No. 62-C9-06-003962, 2009 WL 5576242, at *25 (Minn. Dist. Ct. Dec. 8, 2009), *rev'd*, 801 N.W.2d 203 (Minn. Ct. App. 2011), *rev'd*, 817 N.W.2d 150.

251. *Doe*, 801 N.W.2d at 207, *rev'd*, 817 N.W.2d 150.

252. *Doe*, 817 N.W.2d at 165.

253. *See infra* Section III.C.2.

254. Goldenberg, *supra* note 201; Weiner, *supra* note 48. These attorneys agreed that only in rare cases is purportedly "novel" evidence proffered. Even if the defense argues that a *Frye* hearing is required, these attorneys find that, in a vast majority of cases, proving a methodology's general acceptance is a relatively objective, undisputed hurdle. Therefore, these attorneys focus on developing an expert's foundational reliability for the testimony being proffered because this is commonly the bulk of the dispute before a judge.

Foundational reliability represents the “*Mack*” prong in the two-pronged *Frye-Mack* test.²⁵⁵ After analyzing general acceptance, *Mack* directs a court to determine the reliability of the evidence.²⁵⁶ If the evidence is no longer considered novel, then a court is to focus on this *Mack* prong.²⁵⁷

The 2006 amendment to MRE 702, which codified *Goeb*, requires that all evidence, not just novel scientific evidence, have foundational reliability.²⁵⁸ Foundational reliability for novel scientific theory subject to *Frye-Mack* “requires the ‘proponent of a . . . test to establish that the test itself is reliable and that its administration in the particular instance conformed to the procedure necessary to ensure reliability.’”²⁵⁹ Foundational reliability for all other testimony under MRE 702 “requires a district court to consider the purpose for which the expert testimony is being offered, the reliability of the underlying theory, and the reliability of the evidence in the particular case.”²⁶⁰ Thus, MRE 702 appears to recognize two separate but related standards: one for scientific expert testimony and another for non-scientific expert opinion.²⁶¹ The advisory committee comments noted, however, that the foundational reliability test will vary by context.²⁶²

The following analysis is organized in two parts. The first part examines how Minnesota courts analyze foundational reliability. The second part focuses on *Doe v. Archdiocese of St. Paul & Minneapolis* to examine whether Minnesota courts are beginning to implicitly accept a *Daubert*-like analysis.

255. See *Goeb v. Tharaldson*, 615 N.W.2d 800, 810 (Minn. 2000).

256. *Id.*

257. *State v. Roman Nose*, 649 N.W.2d 815, 819 (Minn. 2002).

258. MINN. R. EVID. 702.

259. *Goeb*, 615 N.W.2d at 814 (citing *State v. Moore*, 458 N.W.2d 90, 98 (Minn. 1990)).

260. *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150, 169 (Minn. 2012).

261. MINN. R. EVID. 702 advisory committee’s comment to 2006 amendment (“If the opinion or evidence involves a scientific test, the case law requires that the judge assure that the proponent establish that ‘the test itself is reliable and that its administration in the particular instance conformed to the procedure necessary to ensure reliability.’” (quoting *Goeb*, 615 N.W.2d at 814)).

262. *Id.*

1. *Foundational Reliability Under MRE 702*

Minnesota Rule of Evidence 702 requires only that “the opinion” have foundational reliability.²⁶³ Additionally, as with all expert testimony, the evidence must assist the trier of fact.²⁶⁴ Foundational reliability determinations are largely discretionary.²⁶⁵ These determinations are reviewed under an abuse of discretion standard, which further expands a trial court’s discretion.²⁶⁶

Despite this discretion, some trial courts applying *Frye-Mack* have been demanding and precise about the showing required to demonstrate foundational reliability. For instance, in *Zandi v. Wyeth*, the court excluded the plaintiff’s experts for lack of foundation.²⁶⁷ Here, the plaintiff sought to establish foundation for evidence that the defendant’s hormone therapy caused the plaintiff’s breast cancer.²⁶⁸ Rather than rely on a broad foundation regarding the correlation between the drug and cancer, the court required foundation for the proposition that “there is a method by which a physician can determine the cause of breast cancer in a particular individual.”²⁶⁹ This presents a high obstacle for a party seeking to demonstrate foundation for testimony on a subject for which there exists an indiscrete number of potential causes.

Similarly, in *Kedrowski v. Lycoming Engines*,²⁷⁰ the trial court excluded expert testimony because it lacked foundational reliability sufficient to prove that the defendant’s fuel pump caused the plaintiff’s plane crash injuries.²⁷¹ The court asked whether “the expert’s opinion [was] sufficiently reliable so the opinions rendered [were] not speculative and [would] assist the trier of fact.”²⁷² The court recognized that the reliability requirement does not require exclusion of all other potential causation theories and stated that it is a jury’s duty to accept or reject an expert’s opinion.²⁷³

263. MINN. R. EVID. 702.

264. *Goeb*, 615 N.W.2d at 814 (citing *State v. Nystrom*, 596 N.W.2d 256, 259 (Minn. 1999)).

265. *See State v. Moore*, 458 N.W.2d 90, 98 (Minn. 1990).

266. *Goeb*, 615 N.W.2d at 815.

267. No. 27-CV-06-6744, 2007 WL 3224242 (Minn. Dist. Ct. Oct. 15, 2007).

268. *Id.*

269. *Id.*

270. No. 62-CV-12-9581, 2016 WL 4919830 (Minn. Dist. Ct. Aug. 16, 2016).

271. *Id.* at *5–12.

272. *Id.* at *5.

273. *Id.* at *6 (citing *Bernloehr v. Cent. Livestock Buying Co.*, 296 Minn. 222,

Nevertheless, after the jury awarded a \$27 million verdict, the court awarded the defendant judgment as a matter of law because the plaintiff's expert failed to employ scientifically reliable or valid testing methodology and failed to reliably discount alternate causes.²⁷⁴

A less demanding test was applied in *C.A.H. v. Holden*.²⁷⁵ Here, the trial court was analyzing the plaintiff's psychologist's determination that the plaintiff suffered from repressed memory syndrome.²⁷⁶ The defendant then retained a psychologist who concluded that the plaintiff did not suffer from repressed memory.²⁷⁷ Both psychologists used comparable methodologies—a mix of testing, interviewing, and self-reporting—to evaluate the plaintiff.²⁷⁸ The trial court cited *Goeb* in concluding that the methods used were “common diagnostic practice in the field of psychology and, therefore, ha[ve] foundational reliability.”²⁷⁹ This foundational reliability determination was exclusively based on the reliability and consistency of the methods, not the validity of the science.²⁸⁰ This methodology-centered analysis is consistent with *Goeb*.²⁸¹

A similarly relaxed test was applied in *Rush v. Jostock*.²⁸² The Minnesota Court of Appeals upheld a trial court determination that expert testimony was admissible to prove that a plaintiff was malingering her pain symptoms.²⁸³ Applying an analysis at odds with the district court's conclusion in *Doe*, the *Rush* court held that evidence of malingering was admissible because the test to show malingering was included in the DSM-IV.²⁸⁴ Moreover, the court cited *Frye-Mack* but instead admitted the testimony as reliable based largely on the expert witness's qualifications and experience.²⁸⁵

225, 208 N.W.2d 753, 755 (1973)).

274. *Id.* at *10–12.

275. *C.A.H. v. Holden*, No. 73-CV-09-7108, 2010 WL 6566538 (Minn. Dist. Ct. Dec. 15, 2010).

276. *Id.*

277. *Id.*

278. *Id.*

279. *Id.*

280. *See id.*

281. *See Goeb v. Tharaldson*, 615 N.W.2d 800, 816 (Minn. 2000) (affirming the district court's conclusion that the expert's methodology was unreliable).

282. 710 N.W.2d 570 (Minn. Ct. App. 2006).

283. *Id.* at 576.

284. *Id.* at 573–77.

285. *See id.* at 575–76, 575 n.2.

2. *Doe v. Archdiocese of St. Paul & Minneapolis: The Minnesota Supreme Court's Subtle Shift Toward Daubert*

The Minnesota Supreme Court's holding in *Doe v. Archdiocese of St. Paul & Minneapolis* highlights three subtle shifts toward *Daubert*.²⁸⁶ First, the court blended the foundational reliability tests for scientific and non-scientific testimony.²⁸⁷ Second, the court applied a factor-based analysis similar to *Daubert*.²⁸⁸ Third, the court's analysis implied that a judge may consider validity, not just reliability, in its foundational reliability analysis.²⁸⁹

First, the supreme court in *Doe* moved away from *Frye-Mack* by merging previously separate foundational reliability tests.²⁹⁰ The trial court in *Doe* applied a *Frye-Mack* foundational reliability test, requiring the plaintiff to show that the theory of repressed memory "is reliable and trustworthy, based upon well-recognized scientific principles and independent validation, and that its administration in the particular instance conformed to the procedure necessary to ensure reliability."²⁹¹ Under this standard, the trial court found the studies underlying repressed memory syndrome unreliable because the studies did not provide sufficient information on the scope of a subject's memory loss or the accuracy of the recovered memories.²⁹²

Because the science at issue was not patently scientific, the plaintiff argued that a general MRE 702 foundational reliability test was appropriate.²⁹³ The Minnesota Supreme Court's analysis evaded this argument by holding that the foundational reliability requirement in MRE 702 is substantially the same for scientific and non-scientific expert opinions.²⁹⁴ Therefore, the supreme court held

286. *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150 (Minn. 2012).

287. *Id.* at 168.

288. *Id.* at 168–69.

289. *Id.* at 166–68 (looking beyond methodology to analyze whether the evidence could prove the accuracy of plaintiff's repressed memories).

290. *Id.* at 168.

291. *Doe v. Archdiocese of St. Paul & Minneapolis*, No. 62-C9-06-003962, 2009 WL 5576242 at *26 (Minn. Dist. Ct. Dec. 8, 2009) (citing *Sentinel Mgmt. Co. v. Aetna Cas. & Sur. Co.*, 615 N.W.2d 819, 824 (Minn. 2000)), *rev'd*, 801 N.W.2d 203 (Minn. Ct. App. 2011), *rev'd*, 817 N.W.2d 150 (Minn. 2012).

292. *Doe*, 2009 WL 5576242 at *29.

293. *Doe*, 817 N.W.2d at 166.

294. *Id.* at 168.

that the trial court's application of *Frye-Mack* instead of a more general MRE 702 test was a "de facto Rule 702 analysis."²⁹⁵

Based on this holding and MRE 702's language, a trial judge must now analyze foundational reliability by asking whether "the theory forming the basis for the expert's opinion or test is reliable."²⁹⁶ This question requires consideration of "the purpose for which the expert testimony is being offered, the reliability of the underlying theory, and the reliability of the evidence in the particular case."²⁹⁷ By eliminating in a foundational reliability analysis any formal distinctions between evidence subject to MRE 702, the court moved closer to *Daubert* and *Kumho Tire Co.*, which together allow a judge to discretionarily determine reliability of all expert testimony in light of the case's particular circumstances.²⁹⁸

Second, the *Doe* court hinted at a shift toward *Daubert* by applying a factor-based analysis. The *Doe* court stated that a district court need only examine "the relevant foundational reliability factors" in its analysis.²⁹⁹ Without enumerating the factors relevant, the supreme court affirmed the district court's conclusion that the plaintiff failed to establish the accuracy of repressed memories and failed to distinguish between repressed memory and forgetfulness.³⁰⁰

In its opinion, the supreme court focused on three facts. First, the court stated that the studies underlying repressed memory did not distinguish repressed memory from other memory loss.³⁰¹ Second, the court agreed that "the accuracy of the recovered memories has not been scientifically established."³⁰² Third, the court found "that there was no way to tell whether a person was actually suffering from repressed memories in any given case."³⁰³ These factors bear similarity to three *Daubert* factors: rate of error, general acceptance, and testability of the theory.³⁰⁴

295. *Id.* at 169. The court also stated that "it makes little difference whether the district court called the analysis a '*Frye-Mack*' analysis or a 'Rule 702' analysis." *Id.* at 168.

296. *Id.* at 166.

297. *Id.* at 169.

298. *See* *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 158 (1999).

299. *Doe*, 817 N.W.2d at 168.

300. *Id.* at 169.

301. *Id.*

302. *Id.*

303. *Id.*

304. *See* *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 592-94 (1993).

Third, the *Doe* court's analysis resembled a *Daubert* analysis by looking past methodology and into validity. *Goeb* limited a court's reliability analysis to methodology.³⁰⁵ In *Doe*, however, the court excluded the evidence based in part on accuracy grounds, not based solely on whether the underlying methodology was reliable and consistent.³⁰⁶ Specifically, the court relied on the trial court's finding of insufficient proof that the plaintiff actually suffered from repressed memory.³⁰⁷ This analysis hints at a conclusion similar to *General Electric Co. v. Joiner*, which allows a judge to "conclude that there is simply too great an analytical gap between the data and the opinion proffered."³⁰⁸

Frye-Mack intended to relieve judges from having to analyze an expert's reasoning or deductions, instead leaving this issue for the jury.³⁰⁹ But, by applying an approach inclusive of validity and based loosely on factors, the court in *Doe* moved closer to *Daubert* and astray from *Frye-Mack*'s deferential, "nose counting" approach.³¹⁰ Further, by deciding the case based on reliability—which is reviewed under an abuse of discretion standard—rather than general acceptance—reviewed de novo—the court exercised even greater discretion.

Doe triggers a key question about how *Frye-Mack* is now applied: if general acceptance plays a role in a foundational reliability analysis, and this foundational reliability analysis applies to all evidence under MRE 702, then what purpose does the added general acceptance requirement for novel scientific evidence serve? This question requires future scrutiny as courts continue to perform foundational reliability analyses consistent with *Doe*.

IV. RECOMMENDATIONS

One solution to the problems identified in this Note would be, as others have argued,³¹¹ to join the vast majority of courts that apply *Daubert*. However, given how politically charged this debate is, compromise may be prudent. Another solution would be to retain

305. *Goeb v. Tharaldson*, 615 N.W.2d 800, 816 (Minn. 2000).

306. *See Doe*, 817 N.W.2d at 168.

307. *Id.* at 168.

308. *General Elec. Co. v. Joiner*, 522 U.S.136, 146 (1997).

309. *See Sentinel Mgmt. Co. v. Aetna Cas. & Sur. Co.*, 615 N.W.2d 819, 823–24 (Minn. 2000) (holding that validity of an expert's extrapolation goes to weight, not admissibility, and is thus a jury question).

310. *Goeb*, 615 N.W.2d at 813.

311. *See, e.g., Gildea, supra* note 49, at 105–09; *Harley, supra* note 68, at 497–508.

Frye's deferential qualities and reconcile the inconsistencies identified in this Note. To do so, several changes should be considered.

First, it would be sensible to redefine what evidence is subject to a general acceptance test. Presently, general acceptance applies to all novel scientific theory.³¹² Trying to determine whether evidence is scientific has proven problematic.³¹³ Accordingly, it would behoove the Minnesota Supreme Court to narrow the applicability of *Frye's* general acceptance test to novel testimony of the “hard science” variety. Science of this categorization (chemistry, physics, biology, and similar physical or mechanical processes), as compared to social or behavioral science, presents the highest risk of misleading triers of fact.³¹⁴ For “hard” science that is deemed novel or cutting edge, *Frye* can appropriately be applied to ensure judges properly defer to the scientific field.³¹⁵ For social or behavior science, as seen in *MacLellan* and *Doe*, a traditional MRE 702 analysis can sufficiently ensure helpfulness, qualification, and reliability.³¹⁶

Next, to ensure proper application of this standard, Minnesota courts must recognize that *Frye* has divorced *Mack*. For *Goeb*, *Doe*, and MRE 702 to coexist, foundational reliability must be applied to the unique characteristics of each expert opinion.³¹⁷ This foundational reliability analysis is detached from any *Frye* analysis. In *Obeta* and *Doe*,

312. MINN. R. EVID. 702.

313. Compare *Doe v. Archdiocese of St. Paul & Minneapolis*, 801 N.W.2d 203, 207–08 (Minn. Ct. App. 2011) (deeming *Frye-Mack* the wrong framework for evaluating the admissibility of repressed memory evidence), *rev'd*, 817 N.W.2d 150 (Minn. 2012), with *Doe v. Archdiocese of St. Paul & Minneapolis*, 2009 WL 5576242, at *25 (Minn. Dist. Ct. Dec. 8, 2009) (excluding repressed memory evidence under *Frye-Mack* as not generally accepted), *rev'd*, 801 N.W.2d 203, *rev'd*, 817 N.W.2d 150.

314. See *State v. MacLellan*, 702 N.W.2d 219, 231 (Minn. 2005) (citing *People v. Beckley*, 456 N.W.2d 391, 403–04 (Mich. 1990)).

315. See *Goeb v. Tharaldson*, 615 N.W.2d 800, 813 (Minn. 2000).

316. See MINN. R. EVID. 702. This does not solve the problem of determining what evidence is novel and thus subject to general acceptance. This author sees no concrete method of remedying this dilemma—any line drawn or definition proposed will prove imperfect in practice. *Daubert* eliminated this problem by forming an inclusive and comprehensive standard that works to implicitly exclude evidence that *Frye* would judge not generally accepted. See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 597 (1993). However, if Minnesota trial lawyers find *Frye's* purported benefits to outweigh the detriment posed by the “novel” ambiguity, then this may be too limited a problem to warrant change.

317. See MINN. R. EVID. 702 advisory committee’s comment to 2006 amendment (stating that the required foundation will vary by context).

the Minnesota Supreme Court referred to *Frye-Mack* as the fourth part of MRE 702.³¹⁸ But, it is truly only *Frye*, not *Frye-Mack*, that the fourth part of MRE 702 describes.³¹⁹ Clearly, for novel, hard science evidence, the foundational reliability inquiry may resemble previous *Mack* applications.³²⁰ But, continuing to refer to the standard for all MRE 702 evidence as *Frye-Mack* causes confusion in application because MRE 702 includes a separate foundational reliability requirement that may differ from *Mack* and not trigger *Frye*.

Finally, appellate courts tasked with *Frye* questions must give *Frye* answers. While not a proposed rule change, this notion carries great importance. Trial courts, correctly or not, commonly rely on precedent to determine whether proffered opinions must be scrutinized under *Frye*.³²¹ Appellate courts disservice trial courts by not deciding cases on the merits to create this precedent.³²² By not aiding in this *Frye* determination, appellate courts fail to foster the uniformity and precedent-based aims underlying Minnesota's standard.

V. CONCLUSION

At day's end, judges follow rigid rules rigidly and flexible rules flexibly. *Frye-Mack* represents a rigid test that aims to facilitate uniform decisions on complex issues.³²³ *Frye-Mack* further intends to rid judges of discretion on complicated scientific issues by deferring in these issues to the relevant scientific community.³²⁴

To achieve these ends, *Frye-Mack* requires a consistent and concrete standard that trial courts can apply. In *Doe v. Archdiocese of St. Paul & Minneapolis*,³²⁵ the court's analysis underscored several key problems with *Frye-Mack* and created others. By failing to address

318. *Doe v. Archdiocese of St. Paul & Minneapolis*, 817 N.W.2d 150, 164–65 (Minn. 2012); *State v. Obeta*, 796 N.W.2d 282, 294 (Minn. 2011).

319. MINN. R. EVID. 702 (referring in part four to general acceptance, not foundational reliability).

320. *See Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000) (requiring the proponent to establish that “the test itself is reliable and that its administration in the particular instance conformed to the procedure necessary to ensure reliability”).

321. *See supra* Section III.A.1.

322. *State v. Hull*, 788 N.W.2d 91, 108 (Minn. 2010) (Meyer, J., concurring).

323. *See Goeb*, 615 N.W.2d at 811.

324. *See id.* at 815.

325. 817 N.W.2d 150 (Minn. 2012).

what constitutes novel scientific theory,³²⁶ particularly regarding issues of social science, the court failed to execute *Frye-Mack*'s goal of uniformity. Also, by applying a factor-based analysis inclusive of general acceptance and validity,³²⁷ and by merging the foundational reliability tests for scientific and non-scientific evidence,³²⁸ the *Doe* court moved closer to a *Daubert*-like analysis. In doing so, the court further clouded the role that general acceptance plays in a *Frye-Mack* analysis.

Frye has clear benefits: it allows judges to defer to scientists on complex scientific opinions, it seeks to prevent judges from exercising undue discretion in deciding admissibility, and it fosters uniformity in decisions if properly applied.³²⁹ To reap these benefits, Minnesota should consider amending its standard for admitting expert testimony by limiting *Frye* to novel opinions of "hard" science, separating *Frye* from *Mack*, and encouraging appellate courts to provide *Frye* issues with *Frye* answers to promote lower court uniformity.³³⁰

326. *Id.* at 165 (electing not to consider *Frye-Mack*'s applicability to repressed memory evidence).

327. *Id.* at 168.

328. *Id.* (deeming *Frye-Mack*'s reliability test substantially the same as a non-scientific test under MRE 702).

329. *See Goeb*, 615 N.W.2d at 813–14.

330. *See supra* Part IV.

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