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# The Other Shoe Drops: Minnesota Rejects Daubert

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# The Other Shoe Drops: Minnesota Rejects Daubert

## **Abstract**

In 1991, the United States Supreme Court handed decided *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, rejecting the long-standing federal test for the admissibility of scientific testimony articulated in *Frye v. United States*. Unlike many states, however, which embraced *Daubert* within years--or even months--of the federal decision, Minnesota declined to make *Daubert* the law of the jurisdiction. In a pair of cases decided in 2000, *Goeb v. Tharaldson* and *Sentinel Mgmt. v. Aetna Casualty & Surety*, the court held that Minnesota would retain the general acceptance test. The court's rejection of *Daubert* can be read as an attempt to give the Minnesota trial bench and bar the best of both worlds: *Frye-Mack* consistency coupled with *Daubert*-style gatekeeping. This article examines the successes and failures of the Minnesota approach.

## **Keywords**

Experts, expert witnesses, evidence, Minnesota law, expert testimony, novel science, Rule 702

## **Disciplines**

Evidence

THE OTHER SHOE DROPS: MINNESOTA REJECTS  
*DAUBERT*

Peter B. Knapp<sup>†</sup>

*"In dreams begins responsibility...."*

William Butler Yeats

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I. THE WORLD ACCORDING TO *DAUBERT*

In 1991, the United States Supreme Court handed down a decision that prompted as much commentary from academics and practitioners as any other evidentiary decision in a generation. *Daubert v. Merrell Dow Pharmaceuticals, Inc.* rejected the long-standing federal test for the admissibility of scientific testimony articulated in *Frye v. United States*.<sup>1</sup> The *Frye* case, decided in 1923 and subsequently adopted by most state jurisdictions, ruled that the test

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1. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993); *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923).

for the admissibility of scientific evidence was whether or not the science underlying the evidence was “generally accepted in the relevant scientific community.”<sup>2</sup> *Daubert* abandoned that test in favor of an approach the Supreme Court contended was more in tune with the Federal Rules of Evidence.<sup>3</sup> Instead of looking only at general acceptance to determine admissibility, Federal judges would henceforth consider a variety of different factors in order to decide whether or not proffered scientific testimony was reliable.<sup>4</sup> If reliable, the Court held, the evidence could be admitted.

All hell broke loose—well, not quite. What did happen is that numerous sages and seers predicted that all hell would break loose. From the wind-swept prairies, the cry went out: If scientific evidence need only be reliable, these doomsayers opined, clever plaintiff’s lawyers will dupe our federal judges into opening the doors of the courtroom to every brand of “junk science.” These dire predictions conjured visions of phrenologists reading the skulls of corporate CEO’s to determine whether they had a predilection to willfully and recklessly disregard the rights and safety of consumers. From the snow-capped mountains came a competing and equally bleak vision: Federal judges will all have to return to institutions of higher learning and obtain Masters’ degrees in science. Only then will they have the knowledge to do the complicated analysis needed to reach decisions about what science is reliable and what science merely seems so. One imagined judges clad not in black robes but white lab coats, spending their evenings and weekends bent over microscopes, poring over computer printouts in their chambers, and huddled with their clerks around Bunsen burners.

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2. For a review of the status of state standards for the admissibility of scientific evidence prior to the *Daubert* decision, see Heather Hamilton, Note, “*The Movement from Frye to Daubert: Where Do the States Stand?*,” 38 JURIMETRICS J. 201, 210 Table 1 (Winter 1998).

3. Promulgated in 1974, the Federal Rules of Evidence make no reference, oddly enough, to *Frye* or the general acceptance test. In fact, a reader of the Advisory Committee notes finds a curious lacuna. There is no mention whatsoever of *Frye* in the Notes. Nearly twenty years later, the Supreme Court helpfully explained this strange omission. It seems that the Federal Rules did not “assimilate” *Frye*, but tacitly superseded it. *Daubert*, 509 U.S. at 589.

4. The litany of *Daubert* factors has now been so often incanted that Justice Blackmun’s cautionary note (“we do not presume to set out a definitive checklist or test”) seems quaintly ironic. *Id.* at 593. The factors mentioned in the opinion are: (1) whether a theory or technique can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) general acceptance. *Daubert*, 509 U.S. at 593-95.

Not surprisingly, these predictions proved a bit extreme. Still and all, *Daubert* has changed the landscape in federal courts—as well as the landscape in the state jurisdictions that have since adopted *Daubert*. Since handing down the *Daubert* decision itself, the Supreme Court has both clarified and expanded the reach of the decision. In 1997, the court ruled that the standard for review of a district court's decision either admitting or excluding evidence is abuse of discretion.<sup>5</sup> Last term, the Court held that the *Daubert* reliability test is applicable not only to scientific evidence, but all expert testimony generally.<sup>6</sup>

## II. MEANWHILE BACK AT THE RANCH

Minnesota courts flirted with the *Daubert* standard on several occasions in the years following the decision.<sup>7</sup> Unlike many states, however, which embraced *Daubert* within years—or even months—of the federal decision, Minnesota declined to make *Daubert* the law of the jurisdiction. And, unlike another substantial minority of the states, neither did Minnesota reject *Daubert*. By the time the supreme court decided *Goeb*<sup>8</sup> & *Sentinel*,<sup>9</sup> Minnesota was one of a handful of states using the *Frye* standard that had neither expressly adopted nor rejected *Daubert*.<sup>10</sup>

Part of the reason for this hesitancy lies in the nature of the case law that defined Minnesota's approach to novel scientific evidence. In 1987, the supreme court decided *State v. Schwartz*, a case that presented the issue of whether population frequency statistics

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5. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 139 (1997).

6. *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 141 (1999).

7. *E.g.*, *State v. Hodgson*, 512 N.W.2d 95, 98 (Minn. 1994); *State v. Klawitter*, 518 N.W.2d 577, 585 n.3 (Minn. 1994).

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

9. *Sentinel Mgmt. v. Aetna Cas. & Surety*, 615 N.W.2d 819 (Minn. 2000).

10. Counting *Daubert* and non-*Daubert* states is not an exact science. Some states had moved from *Frye* to standards for admissibility much like *Daubert*, prior to the Supreme Court's decision in that case in 1993. Of these states, some have now expressly adopted *Daubert*, some have recognized *Daubert*, and some have remained silent. Some states now have a wealth of appellate court jurisprudence recognizing *Daubert*, but no decision from their supreme courts. That being said, I make it out to be thirty-three states using *Daubert* or a reasonable facsimile thereof to guide admissibility of expert evidence; eleven states, including Minnesota, rejecting *Daubert*; and just five states retaining a non-*Daubert* standard without any pronouncement rejecting *Daubert*. For two relatively recent tabulations of the state response see Hamilton, *supra* n.2, at 210 Table 1; Bert Black, "Expert Evidence in the Wake of the *Daubert-Jones-Kumho Tire Trilogy*," *Products Liability*, SE01 ALI-ABA 125, 171 (July 22, 1999).

could be used in Minnesota courts.<sup>11</sup> The court ultimately held that the statistics could be used, but the final number, the bottom-line statement of the likelihood of a random match, the one in a trillion figure, could not be presented to the jury. In reaching this result, the court declined to move to a new standard many other jurisdictions were pondering. This approach, which had been used by other jurisdictions most often when wrestling with the admissibility of DNA testing and population frequency statistics was, at the time, typically referred to as the "relevance" standard.<sup>12</sup> A precursor to the standard adopted in *Daubert*, jurisdictions using the relevance test looked to Rule 702 for guidance and determined that a litany of factors, including general acceptance, should be considered when determining whether novel scientific evidence should be admitted in court.<sup>13</sup> Though declining to adopt a different test, the *Schwartz* court did take a few cautious steps beyond the strict general acceptance test enunciated in *Frye*. Forensic DNA typing, the court held, had "gained general acceptance in the scientific community," but the admissibility of specific test results in a particular case would hinge upon considerations concerning the testing laboratory's compliance with appropriate standards.<sup>14</sup> In *Schwartz*, the court ultimately ruled that the testing laboratory had failed to adhere those standards and, thus, the test results were inadmissible. In reaching this conclusion, the court signaled some willingness to look beyond the limited question of "general acceptance." For example, the court stated that publication of data in peer review journals was one means of assessing the scientific validity of testing procedures and principles. The court also pointed to rates of error as another factor to be weighed in determining whether a particular testing procedure was admissible.<sup>15</sup> Both factors are, of course,

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11. *Schwartz*, 447 N.W.2d 422, 428 (Minn. 1989).

12. *Id.* at 424-25. Chief among the "relevance" decisions was *U.S. v. Downing*, 753 F.2d 1224 (3d Cir. 1985).

13. In *Downing*, for example, the Third Circuit suggested that the following factors could be used to assess the reliability of scientific expertise that had no established track record in litigation: The novelty of the new technique and its relationship to more established modes of scientific analysis; the existence of specialized literature dealing with the technique; the exposure of the technique to critical scientific scrutiny; the qualifications and professional stature of the expert; the non-judicial uses to which the scientific technique is put; the rate error; and whether expert testimony has before been offered to support or dispute the technique. *Downing*, 753 F.2d at 1238-39.

14. *Schwartz*, 447 N.W.2d at 428.

15. *Id.* at 426-28.

factors examined when the standard is not general acceptance, but reliability. In the end, however, *Schwartz* reaffirmed Minnesota's allegiance to *Frye-Mack*.

In the years that followed, not only was *Daubert* decided, but DNA testing and the use of population frequency statistics became increasingly widespread. Chafing at the supreme court's refusal to permit unfettered use of population frequency statistics, the state legislature passed a statute, which might have seemed to settle the issue.<sup>16</sup> The supreme court, however, suggested that the statute might well be unconstitutional.<sup>17</sup> In 1997, with the state legislature on the verge of passing a statute authorizing a referendum to amend the state constitution to expressly provide for the admissibility of population frequency statistics, the supreme court decided *State v. Bloom*.<sup>18</sup> The plurality opinion in that case carved out an exception to *Schwartz*, and permitted free use of population frequency statistics in conjunction with DNA testing.<sup>19</sup> *Schwartz* remained the law, at least in the eyes of the supreme court, with respect to all other uses of these statistics. That apparently satisfied the state legislature; the referendum movement went no further.<sup>20</sup>

The salient point here about the decision in *Bloom* is not that the court eased restrictions on the use of large numbers nor that the court turned aside a legislative challenge to its hegemony over evidence law. *Bloom* decided the DNA question in Minnesota without deciding the *Daubert* question. In reviewing other state supreme court decisions that either reject or adopt *Daubert*, it is striking how many are decisions opining on the admissibility of DNA evidence. For many states, the answer to the DNA question also proved to be the answer to the *Daubert* question.<sup>21</sup> By unlinking those issues, the Minnesota Supreme Court was able to postpone its decision on the *Daubert*.

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16. MINN. STAT. § 634.25 (1989).

17. *State v. Nielson*, 467 N.W.2d 615, 620 (Minn. 1991).

18. 516 N.W.2d 159 (Minn. 1994).

19. The Minnesota Supreme Court had, before the decision in *Daubert*, recognized the general acceptance of the principles underlying DNA testing. *State v. Jobe*, 486 N.W.2d 407, 419-20 (Minn. 1992).

20. "Admissibility of DNA Evidence," *SIDEBAR, BENCH & BAR* 23 (August 1994).

21. *Supra*, note 10. On the difficulty of counting which states have or have not opined on *Daubert*. That being said, by my count, twenty-two states have weighed in on the *Daubert* decision in cases involving DNA testing, as opposed to only six, and now with Minnesota, seven, in civil cases.

III. *DAUBERT* REVISITED

Hindsight seems to have proved the wisdom of postponing the *Daubert* decision. The federal experience with *Daubert* is instructive and certainly has done much to dispel the most dire predictions about the impact of that decision. First and foremost, *Daubert* has not opened the courtroom doors to junk science. In retrospect, it seems surprising that commentators would have ever thought that federal trial judges would be so credulous. While the defense bar has undoubtedly worked hard to persuade federal judges to take their gatekeeping function seriously, it seems likely that most federal judges were only too happy to exercise their authority to exclude suspect expert witness testimony. Indeed, today, few if any *Daubert* doyens seem to believe that the decision has made marginal testimony easier to admit or been any sort of boon to the plaintiff's bar. To the contrary, some commentators have charged that federal judges are using *Daubert* to tighten the causation requirements in torts cases generally.<sup>22</sup>

At the same time, time has not found favor in the hope Justice Rehnquist expressed in his separate opinion:

I do not doubt that Rule 702 confides to the judge some gate keeping responsibility in deciding questions of admissibility of proffered expert testimony. But I do not think it imposes on them either the obligation or the authority to become amateur scientists in order to perform that role.<sup>23</sup>

Most observers do seem to agree that *Daubert* hearings do require a great deal of scientific analysis on the part of the presiding judge.<sup>24</sup> One commentator, writing about the adoption of the

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22. E.g., Lucinda M. Finley, "Guarding the Gate to the Courthouse: How Trial Judges Are Using Their Evidentiary Screening Role to Remake Tort Causation Rules," *Symposium: Judges as Tort Lawmakers*, 49 DEPAUL L. REV. 335, 335-36 (Winter 1999).

23. *Daubert v. Merrell Dow Pharm. Inc.*, 509 U.S. 579, 600-01 (1993) (Rehnquist, J., concurring in part, dissenting in part).

24. And at least one commentator has questioned whether the judiciary now possesses the skill to do that analysis. In the aftermath of an enactment to the Texas evidentiary rules mirroring FED. R. EVID. 702, the Honorable Cynthia Stevens Kent conducted a survey of Texas judges to determine their level of scientific sophistication. Judge Kent wrote:

The Texas judiciary, continuing education programs providers, and the Texas law schools have confidence in the ability of Texas judges to provide this gate keeping role. However, the source of that confidence does not appear to be based upon the background, experience or education of the trial judges as it relates to scientific methodology.



*Daubert* standard in a state jurisdiction, noted....None of this really ought be surprising. Without question, *Frye* hearings deciding whether new science has yet reached the threshold of "general acceptance" may also require painstaking analysis of highly technical questions. *Daubert*, however, raises the level of inquiry a step further. As the Ninth Circuit Court of Appeals tartly observed, when reviewing *Daubert* on remand:

Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to resolve disputes among respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not "good science," and occasionally to reject such expert testimony because it was not "derived by the scientific method." Mindful of our position in the hierarchy of the federal judiciary, we take a deep breath and proceed with this heady task.<sup>25</sup>

What's more, the analysis required has unfortunately little value to the next judge confronting the same novel scientific technology. Another trial judge in the next district over—or the next courtroom over—may have conducted a two-week *Daubert* hearing and excluded proffered testimony from the same expert who now stands before the court. That prior ruling will not, in and of itself, spare this next judge the time, expense, and mental labor required to determine whether the expert's testimony is *now* reliable, if that expert has made one additional test, published one additional study, or conducted one additional experiment. It is not that general acceptance is a target that never moves; the problem lies in the fact that reliability *can* move much more quickly. Prior to *Daubert*, the push for a standard more liberal than general acceptance was a campaign waged not so much by the plaintiff's bar, but by prosecutors. Arguing on behalf of the admissibility of DNA testing or other novel forensic technology, prosecutors contended that the criminal justice system needed to make immediate use of science that was reliable, though not yet generally accepted.<sup>26</sup>

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The Hon. Cynthia Stevens Kent, "*Daubert Readiness of Texas Judiciary: A Study of the Qualifications, Experience, and Capacity of the Members of the Texas Judiciary to Determine the Admissibility of Expert Testimony Under the Daubert, Kelly, Robinson, and Havner Tests*," 6 TEX. WESLEYAN L. REV. 1, 28-29 (Fall 1999).

25. *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311, 1316 (9<sup>th</sup> Cir. 1995) (hereinafter referred to as *Daubert II*).

26. *E.g.*, *State v. Schwartz*, 447 N.W.2d 422,424 (Minn. 1989); *State v. Klawitter*, 518 N.W.2d 577, 585 n.1 (Minn. 1994).

The import of this argument is clear: science may become reliable long before it is generally accepted. The consequence of this difference is equally clear: there will be many an opportunity for courts to determine whether new science is at last reliable before there will be any need to ask if that science is yet generally accepted. The impact of this point on the workload of trial judges is manifest: the precedential value of any earlier ruling on reliability lasts only as long as the science remains static. Judges need to make close inquiry on reliability far more often than they would need to inquire as to general acceptance.

#### IV. *DAUBERT* REJECTED

At the end of this summer, seven full years after the Supreme Court decided *Daubert*, our own Minnesota Supreme Court addressed the question of whether or not Minnesota would move away from the *Frye-Mack* test of general acceptance and towards the *Daubert* reliability test. In a pair of cases, *Goeb v. Tharaldson and Sentinel Mgmt. v. Aetna Casualty & Surety*, the court held that Minnesota would retain the general acceptance test.<sup>27</sup> Though the *Goeb* decision seems to be the lead opinion, and ten years down the road will probably have been cited twice as often, the two decisions must really be read in tandem.

#### V. *GOEB V. THARALDSON*: HEADS, THE TRIAL JUDGE WINS

Timothy Tharaldson operated Duluth Quality Pest Control and, in March of 1990, applied a variety of different pesticides to a rental home that was suffering an ant infestation. One of the pesticides, the one that eventually became the central issue in the lawsuit, was Dursban. Manufactured by Dow Chemical Company, Dursban contains chlorpyrifos.

Lawrence and Diane Goeb rented the house, and on April 1, 1990, two days after the application of Dursban, visited the house to begin cleaning for their move in later that week. Mr. Lawrence testified that when he first walked into the house, he noticed "a strong, pungent, chemical smell,"<sup>28</sup> which burned his nose and throat. The landlord had advised the Goebes that they might notice a smell in the house and that they should keep the doors and win-

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27. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814 (Minn. 2000); *Sentinel Mgmt. Co., et al. v. Aetna Cas. & Surety Co., et al.*, 615 N.W.2d 819 (Minn. 2000).

28. *Goeb*, 615 N.W.2d at 802.

dows open and use soap and water to clean up a light dust they might find throughout the house.<sup>29</sup>

Almost immediately, the Goeb's noticed symptoms that they associated with the odor in the house. The night after their first visit, Ms. Goeb experienced headache, diarrhea, and nausea. The Goeb's talked with their landlord about the odor and their symptoms, and their landlord contacted Mr. Tharaldson. Mr. Tharaldson, in turn, called Dow to find out if the Dursban could have caused the Goeb's symptoms; Dow thought not. Mr. Goeb contacted Dow directly, and a Dow representative reassured him that Dursban could not cause his wife's symptoms. Their concerns allayed, the Goeb's moved into the home on April 5, though the chemical odor persisted even after cleaning and airing out the house.<sup>30</sup>

After moving, the Goeb's continued to suffer from a variety of symptoms, including sinus irritation, nasal discharge, difficulty swallowing, nausea, diarrhea, memory loss, light-headedness, and muscle weakness. When Mr. Goeb again contacted Dow near the end of April, the Dow representative recommended Mr. Goeb see a doctor and have a cholinesterase test, a test that would determine whether he had an acute overexposure to an organophosphate compound. Both Mr. and Mrs. Goeb had the test and the tests came back within expected normal ranges. Despite these results, the Goeb's decided to move out of the house. They continued to experience symptoms they attributed to their exposure to Dursban long after they moved out of the house.<sup>31</sup>

Once they had left the house, the Goeb's contacted the St. Louis County Health Department. In the middle of May, the health department epidemiologist and two Dow representatives visited the house and collected air samples. The health department eventually concluded that the levels of chlorpyrifos in the house and the Goeb's symptoms were consistent with organophosphate poisoning. The department also concluded, however, that the Goeb's continuing illness could not be attributed to their exposure to the chlorpyrifos in the house.<sup>32</sup>

The Goeb's sued Mr. Tharaldson and Dow Chemical, alleging a number of different causes of action, including the negligent

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29. *Goeb*, 615 N.W.2d at 803.

30. *Id.* at 804.

31. *Id.* at 805ff.

32. *Id.* at 805.

manufacture and application of insecticide. During discovery, the Goebes identified two experts who testified that the Goebes suffered permanent injury caused by their exposure to Dursban. Both experts had impressive credentials and lengthy medical experience; both had published numerous articles on pesticide toxicology or neurotoxicological testing in peer-reviewed journals; both had extensive experience testifying as expert witnesses.<sup>33</sup> When the time came for the trial court to rule on the admissibility of their testimony, at the behest of defendant Dow's motion, the trial court excluded the testimony of both experts.<sup>34</sup>

The trial judge granted the motion to exclude on two separate bases. First, the court found the experts had used methodologies that were not generally accepted. Second, the court determined that the experts' testimony was unreliable. With admirable foresight, the trial judge also ruled that "regardless whether the testimony of Drs. Sherman and Kilburn which has been proffered be evaluated as to its admissibility under the standards of *Frye*...or *Daubert*...their reliability is wanting."<sup>35</sup> The court of appeals affirmed the trial court.<sup>36</sup>

The supreme court affirmed the trial judge's ruling excluding the testimony, and in the course of doing so reaffirmed Minnesota's allegiance to the *Frye* standard, or as we like to call it, the *Frye-Mack* standard.<sup>37</sup> After reviewing the common arguments in favor of the *Daubert* standard (it permits "cutting edge" technology to be used in court, *Frye* "abdicates" to scientists the responsibility of determining evidentiary admissibility, *Daubert* is more consistent with

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33. *Id.* at 805-07.

34. *Id.* at 808-09.

35. *Id.* at 809.

36. *Goeb v. Tharaldson*, No. CX-98-2275, 1999 WL 561956 at \*10 (Minn. Ct. App. Aug. 3, 1999). This case, as well as the companion case *Sentinel Management*, belies the common wisdom that the supreme court is unlikely to review court of appeals decisions that are unreported. *Sentinel Mgmt. Co., v. Aetna*, No. CX-98-2304, 1999 WL 540466 (Minn. Ct. App. July 27, 1999) (unpublished). Of the last fifty civil cases the supreme court has reviewed, twenty, a full forty percent, were unreported. You could look it up—famous saying of Carey Stengel.

37. Minnesota first adopted *Frye* in *State v. Kolander*, 236 Minn. 209, 221-22, 52 N.W.2d 458, 465 (1952). In *State v. Mack*, 292 N.W.2d 764, 768-69, 72, (Minn. 1980), the court rejected witness testimony that had been developed through the aid of hypnosis. In doing so, the court held that the proffered testimony did not "meet ordinary standards of reliability for admission." *Mack*, 292 N.W.2d at 772. Subsequent cases, including *Goeb*, have cited *Mack* for the proposition that the decision added a second prong to the *Frye* test, one requiring that proffered evidence must also have a foundation that is scientifically reliable. *Goeb*, 615 N.W.2d at 809.

the approach articulated in Rule 702), the court rejected those arguments and readopted the *Frye-Mack* standard. Chief Justice Blatz, writing for a unanimous court, held:

Therefore, when novel scientific evidence is offered, the district court must determine whether it is generally accepted in the relevant scientific community. In addition, the particular scientific evidence in each case must be shown to have foundational reliability.<sup>38</sup>

The two prongs of the test are subject to appellate review, the court held, pursuant to two very different standards of review. General acceptance is a question of law that will be reviewed *de novo*. Trial court determinations of foundational reliability, on the other hand, will be reviewed under an abuse of discretion standard.<sup>39</sup>

The defendants in *Goeb* had challenged both the general acceptance of the plaintiffs' experts' methodologies and the foundational reliability of those experts' conclusions. The district court, in turn, excluded the testimony on both bases. The supreme court, however, reached only one of those determinations. While noting that there was scientific discord regarding the necessity of chemical exposure levels for establishing causation, the court reasoned that it need not reach the question of what the generally accepted methodology should be, because the second prong of the *Frye-Mack* standard was dispositive. The court then took up analysis of the district court's ruling that the proffered testimony lacked foundational reliability.

The court focused its analysis on a series of the trial judge's findings concerning reliability. This set of findings dealt principally with the basis of factual knowledge underlying the experts' methodology, and not with the science underlying that methodology. For example, the court noted that while Dr. Sherman claimed that she had conducted a differential diagnosis, she had not reviewed all of the plaintiffs' pre-exposure medical records.<sup>40</sup> Similarly, Dr. Kilburn stated in his affidavit that he too had performed a differential diagnosis, but at his deposition admitted that he did not read the plaintiffs' pre-exposure or post-exposure medical records.<sup>41</sup> Findings like these, viewed in the light of an abuse of dis-

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

39. *Id.* at 815-16.

40. *Id.* at 815.

41. *Id.* at 816.

cretion standard, make it easy for an appellate court to affirm, and that is what the court did.

VI. *SENTINEL MANAGEMENT V. AETNA CASUALTY AND SURETY: TAILS, THE TRIAL JUDGE WINS*

The *Sentinel* case is the opposite side of the *Frye-Mack* coin. In *Goeb*, the court reaffirmed Minnesota's adherence to the general acceptance standard and affirmed the trial court's exclusion of the plaintiff's expert testimony. In *Sentinel*, the court rejected defendant's argument that the plaintiff's expert had relied upon suspect methodology and affirmed the trial judge's admission of the testimony.<sup>42</sup> The language of the Minnesota supreme court, in both *Goeb* and *Sentinel*, promise deference to trial court determinations of foundational reliability. Taken together, the results in the two cases demonstrate that the supreme court's promise will ring true.

Plaintiff Sentinel Management managed twelve buildings and, at ten of the buildings, was also the general partner for ten different limited partnerships. Along with eleven other plaintiffs, Sentinel brought suit against seven, and eventually eight, defendant insurers under all-risk, first-party policies of insurance covering the different properties. Plaintiffs alleged that asbestos fibers had been released in their buildings, and that the resulting losses were covered by the insurance policies.<sup>43</sup> Following a round of summary judgment motions and an appeal, the case returned to the trial court with New Hampshire Insurance Company remaining as the lone defendant. By the time of trial, the district court had further pared down the case, granting summary judgment to New Hampshire and dismissing plaintiffs' claims with respect to all but one of the buildings, Kellogg Square.

Much of the court's decision in *Sentinel* is concerned with issues other than the admissibility of the plaintiffs' expert testimony.<sup>44</sup> The discussion of that testimony is, however, instructive.

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42. *Sentinel Mgmt. Co. v. Aetna Cas. and Surety Co., et al.*, 615 N.W.2d 819, 825 (Minn. 2000).

43. *Id.* at 822.

44. Indeed, much of the court's decision stands as a short course in what *not* to do on appeal to the Minnesota Supreme Court. The court ultimately ruled that New Hampshire had failed to show that the plaintiff did not meet its burden of proof of a direct physical loss. In the course of reaching this ruling, the court repeatedly takes New Hampshire to task for misrepresenting the testimony of witnesses, editing quotes in a misleading fashion, selectively ignoring portions of documentary evidence, and quoting testimony out of context. *Sentinel*, 615

The plaintiffs' expert, Richard Hatfield, tested dust gathered from five apartments at Kellogg Square. Four of those samples tested positive for asbestos fibers. Using these test results, along with a visual inspection of the building and a review of work orders and information about tenant activity, Mr. Hatfield concluded that all of Kellogg Square was contaminated by asbestos fibers.<sup>45</sup>

New Hampshire challenged the testimony, arguing that Mr. Hatfield's methods were neither generally accepted nor reliable. In particular, New Hampshire objected to Mr. Hatfield's use of the four test results to extrapolate his conclusion that the entire property was contaminated. New Hampshire argued that the extrapolation was unreliable "junk science" that should have been excluded.<sup>46</sup> The court gave little consideration to the question of whether Mr. Hatfield's extrapolation constituted science that was either generally accepted science or junk science. Instead, the court focused on the claim that the extrapolation was unreliable, and characterized New Hampshire's argument as one concerning the foundational reliability of the expert testimony. This characterization is, of course, critical. Since the arguments concerned reliability and not general acceptance, the court reviewed the decision to admit the testimony under an abuse of discretion standard.

The court first examined the record and found that Mr. Hatfield had relied on more than his samples to come to a conclusion the entire Kellogg Square property was contaminated. Finding additional evidence underlying the extrapolation, the court ruled that New Hampshire's concerns about the testimony went to its weight, not its admissibility.<sup>47</sup> Next, the court took up New Hampshire's assertion that the expert testimony was unreliable because Mr. Hatfield's conclusion about contamination was not based on air samples. Relying on another expert's testimony that asbestos fibers are only hazardous when airborne and inhaled, New Hampshire con-

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N.W.2d at 826. The court also ruled that the trial court erred in dismissing on summary judgment claims of asbestos contamination in the buildings at issue other than Kellogg Square. The court concluded that scientific testimony is not a prerequisite for satisfying the first prong of the manifestation trigger standard, the showing that appreciable damage occurred during the policy period. The court reasoned that there was sufficient non-scientific evidence about contamination at the other ten buildings to establish a genuine question of material fact, and consequently remanded the case. *Id.* at 827-28. *Voila!* On appeal, a five million dollar judgment becomes a fifty million dollar lawsuit.

45. *Id.* at 823.

46. *Id.* at 824.

47. *Id.* at 824-25.

tended that Mr. Hatfield's conclusions were inadmissible because the samples he took were from carpeting in apartments. The court made short work of New Hampshire's assertion, pointedly observing that "this argument ignores the law of gravity."<sup>48</sup> In sum, the court ruled that the trial court did not abuse its discretion in admitting Mr. Hatfield's testimony.

#### VII. IF IT'S GOOD ENOUGH FOR THE FEDS, ISN'T *DAUBERT* GOOD ENOUGH FOR US?

The court's opinion in *Goeb* sets forth two principal reasons for rejecting *Daubert*. First, the court expressed concern that *Daubert* did require judges to make decisions based upon a scientific expertise foreign to most members of the bench.<sup>49</sup> Second, the court stressed that "the potential for non-uniformity in the law under *Daubert* gives us considerable cause for concern."<sup>50</sup> In particular, the court noted that both the Fifth and Ninth Circuits have now overruled the per se exclusion of polygraph evidence. This abandonment of per se rules of exclusion would, the court reasoned, mean that trial judges would have to consider polygraph evidence anew each time it is raised. Consequently, the court concluded, there could be widespread variation among trial court rulings because decisions on admissibility "may not be correctable at the appellate level under an abuse of discretion standard of review."<sup>51</sup>

To this list of reasons for rejecting *Daubert*, two more can be added. Both of these problems lurk in the shadows of the disadvantages mentioned by the court. First, the court is correct to conclude that, in the absence of per se rules, trial judges will have to take up the admissibility of novel scientific evidence anew each time it is presented in the courtroom. The disadvantage of this is

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48. *Id.* at 825.

49. *Goeb v. Tharaldson*, 615 N.W.2d 800, 813 (Minn. 2000). This concern is valid, as even a cursory glance at some of the district court opinions on scientific admissibility demonstrate. My all time favorite remains *Wade-Greaux v. Whitehall Labs., Inc.*, 874 F. Supp. 1441 (D. V.I. 1994), a lengthy opinion in which the trial judge reviews laboratory notes to count the number of female rabbits in different dosage groups. *Id.* at 1460. For another example of the same depressing phenomenon, see *Nat'l Bank of Commerce v. Dow Chem. Co.*, 965 F. Supp. 1490 (E.D. Ark. 1996). This opinion is forty-one pages long, not including the twenty-five pages of appendices. The central issue in the case is whether to admit testimony from plaintiffs' expert, Dr. Jannette Sherman, about whether or not Dow's pesticide Dursban caused plaintiffs' injuries. *Id.* at 1508-09. Sound familiar?

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

51. *Id.*



not, however, so much the risk of variation among rulings as it is the misuse of the time and energy of the trial bench. As argued above, if the standard for admissibility is reliability, there will be a need to make a close inquiry about novel evidence more frequently than if the standard is general acceptance. If that inquiry resulted in a well-reasoned opinion that could guide a colleague judge the next time this expert showed up in court that might not be a disadvantage. Unfortunately, that it not the case. The well-reasoned opinion will provide guidance, but to the expert, not the sitting judge in the next case. The expert will be able to use that opinion to correct the noted deficiencies in his or her opinion, and the sitting judge in that next case will need to begin work at square one. The disadvantage of *Daubert* is not the risk of variance; the disadvantage is that *Daubert* destroys the precedential value of the work trial judges do in adducing admissibility.

One need look no further than the *Goeb* decision itself to find an example of this phenomenon. *Goeb* cites a decision that springs from a massive piece of litigation, *In re Paoli R.R. Yard PCB Litigation*,<sup>52</sup> for the proposition that the self-reporting of a plaintiff's medical history in preparation for litigation, without additional independent confirmation, is inherently unreliable. Certainly the case can be cited for that proposition, but there is a far more important point about the law embedded in the *Paoli* litigation. The expert whose opinion was challenged in *Paoli* was none other than Dr. Jannette Sherman, one of the two experts whose opinion was challenged in *Goeb*. Just as in *Goeb*, Dr. Sherman's opinion was proffered to demonstrate a causal link between the *Paoli* plaintiffs' illnesses and chemical exposure for which the defendants were allegedly liable. And just as in *Goeb*, the questions concerning Dr. Sherman's testimony related to the foundational reliability of her testimony, and, in particular, whether or not she had made an adequate review of the plaintiffs' medical history.<sup>53</sup>

What is instructive about the *Paoli* litigation is how much judicial time and energy has been devoted to determining the reliability of the proffered expert testimony—and how little of that work will provide any tangible benefit for other judges and other lawyers wrestling with the same issues. The lead opinion in the *Paoli* decision cited by our court runs to over eighty pages. This, of course, is

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52. 35 F.3d 717 (3d Cir. 1994).

53. *Id.* at 755-63.

only the tip of the proverbial iceberg. According to the circuit court:

The district court conducted five days of in limine hearings, receiving extensive evidence about the scientific reliability of plaintiffs' expert opinion. It then filed extensive opinions (totaling 330 pages) setting forth not only findings of fact but also its reasons for again excluding the vast bulk of plaintiffs' expert evidence.<sup>54</sup>

Moreover, the *Paoli* opinion cited is only the third in a series of five circuit court opinions in the case. Needless to say, those other opinions, and the district court orders and decisions that spawned them, were not exclusively concerned with the reliability of Dr. Sherman's expert opinions. That issue, however, continued to haunt the litigation, requiring recurring time and attention from the judiciary. Most recently, in March of this year, the district court again revisited the methodology Dr. Sherman used in determining that the plaintiffs' illnesses were the result of exposure to PCBs.<sup>55</sup>

The *Paoli* litigation presented complex and important questions and, to be sure, the principal focus of the jurists working on the case must be the just resolution of these questions. But in a common law system, we hope to be able to turn to past decisions as a guide for resolving present controversies. Reading the *Paoli* decisions devoted to the admissibility of expert testimony, what does one find? Hundreds and hundreds of pages and not more than a drop of precedent. That is the legacy of *Daubert's* reliability test. The focus of an inquiry about reliability is, and must be, the specific work done by the individual expert in the case at hand. Broader questions, such as whether the methodology used can generate evidence that ought be admitted in court, take a backseat to the intensive, particularized examination the *Daubert* reliability standard requires. Consequently, the decisions made in *Paoli* provide only minimal guidance to the next judge, even when that judge is attempting to evaluate opinions in the same field of science proffered by the self-same expert.<sup>56</sup>

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54. *Id.* at 732.

55. *In re Paoli R.R. Yard Litig.*, Nos. 86-2229, 87-1190, 87-1258, 87-3227, 2000 WL 274262, at \*3-6 (E.D. Penn. March 7, 2000).

56. This is not to say that such a thing cannot happen in Minnesota. It did. In the federal system in the *Paoli* litigation, the trial judge and appellate court rejected portions of Dr. Sherman's testimony because it did not appear sufficiently reliable to pass muster pursuant to *Daubert*. Here in Minnesota, in the *Goeb* litigation, the trial judge and appellate court rejected Dr. Sherman's testimony because

There is a second reason our court was wise to reject *Daubert*. In its decision in *Goeb*, the court expresses concern that *Daubert* creates the potential for non-uniformity because "variation in decisions at the district court level...may not be correctable at the appellate level under an abuse of discretion standard of review."<sup>57</sup> Implicit in this concern is the assumption that appellate courts will defer to trial judge determinations about reliability. If that were the case, there surely would be variations at the trial court level with respect to whether certain types of scientific opinion were admissible. On the other hand, the disadvantage of this approach might well be offset by the advantages of trial court autonomy. Reliability is a test superior to general acceptance, the *Daubert* proponent argues, because our appellate courts are freed from analyzing questions of reliability.<sup>58</sup> Better still, our trial judges need not worry about the specter of reversal and the additional work required when a case is remanded because evidence was improperly excluded or admitted. Under a general acceptance test, the argument continues, it is simply too easy for appellate courts to second-guess trial judges. With *Daubert*, our trial judges truly are the gatekeepers for their own courtrooms.

The assumption that *Daubert* and *Joiner* will promote district court gatekeeping is certainly reasonable. That would appear to be, after all, the clear import of *General Electric v. Joiner*.<sup>59</sup> That assumption does not, however, seem to be borne out in practice. Once again, the *Paoli* litigation provides stark testimony to *Daubert* difficulties. The appellate court in *Paoli*, that same court that gave account of the five days of hearings in limine and extensive opinion, reversed the trial judge's determination that the proffered testimony was not reliable.<sup>60</sup>

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it did not appear sufficiently reliable to pass muster pursuant to the second prong of the *Frye-Mack* test. The critical difference is that because of *Daubert*, the federal inquiry is always and only an inquiry about reliability. Under *Frye-Mack*, evaluation of expert testimony is not limited to reliability. Our courts can and, we hope, will reach the broader questions posed by analysis of general acceptance.

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

58. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593-95 (1993).

59. 522 U.S. 136 (1997).

60. *In re Paoli v. R.R. Litig.*, 35 F.3d 717, 759 (3d Cir. 1994). In *Paoli*, at least this part of the *Paoli* litigation, was decided prior to *Joiner*. Nonetheless, the Third Circuit applied an abuse of discretion standard for a review of trial court ruling on the admissibility of scientific testimony prior to the Supreme Court's decision in *Daubert*. E.g. *In re Paoli*, 35 F.3d at 759 (stating that "...sometimes differential diagnosis can be reliable with less than full information, and, to the extent that the

*Paoli* is not an anomaly. Since *Joiner* was decided, the Eighth Circuit Court of Appeals has decided seventeen cases in which it has ruled on a district court judge's determination admitting or excluding expert testimony. It has reversed the district court in five of those cases.<sup>61</sup> If a thirty percent rate of reversal does not seem significant, consider three facts. First, the Eighth Circuit Court's rate of reversal across its past one hundred decisions in *all* reported cases, whether reviewed under an abuse of discretion or *de novo* standard, is only thirty-four percent.<sup>62</sup> In other words, appellate "deference" to the trial bench is yielding only a very slim decrease in the rate of reversal. Second, no trial judge facing reelection would campaign on the slogan "Only about a third of my decisions are reversed." Third and finally, in the last seventeen cases in which the Minnesota Supreme Court has ruled on a trial judge's admission or exclusion of expert testimony, the court *did not reverse the trial judge even once*.<sup>63</sup> Put simply, there is no reason to believe that Minnesota's adherence to *Frye-Mack* undermines the trial judge's authority to act as gatekeeper for his or her courtroom. If anything, there seems to be a higher level of appellate interference with that function at the federal level.

#### VIII. ALRIGHT, NOW WHAT?

The supreme court's decisions in *Goeb* and *Sentinel* certainly answered the big question, *Frye-Mack or Daubert?* The big question is not the only question, however. Three questions, in particular, need further attention:

- What makes expert evidence reliable?
- When is science generally accepted? and,
- What is to be done with expert testimony that isn't scientific?

One of these questions the court answered, at least in part, implicitly; one, the court chose not answer; and one, the court may have answered in the past but will probably have to answer again.

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district court concluded otherwise, we hold that it abused its discretion.") Well, at least the court is *saying* it is using an abuse of discretion standard.

61. That total is calculated as of October 9, 2000. If you need a more current tally, punch in "*Daubert*" in the search engine of your choice and count 'em up yourself.

62. *Ibid.*

63. *Ibid.*

A. *What Makes Expert Evidence Reliable?*

In the course of deciding to affirm the trial judge's exclusion of the expert testimony in *Goeb*, the supreme court took careful measure of the gaps in the factual foundation supporting the experts' opinions. Certainly, expert familiarity with the facts of a case is an essential element of reliability. There is at least some indication in the court's decision, however, that an analysis of foundational reliability need not be confined to facts alone.

Not all the court's attention in *Goeb* was directed toward factual foundation. The court also took note of the basis for one of the expert's conclusions on causation. The expert testified at his deposition that in reaching his opinion on causation, he had relied exclusively on neuropsychological and neurophysiological tests he conducted on the plaintiffs six years after their exposure to Durban. The court noted that the expert testified that, first, he was unaware of any other researcher using these tests, and second, that the tests had not been peer-reviewed.<sup>64</sup> The second factor is one of the *Daubert* litany; the first is one used by "relevance" courts since the decision in *Downing*. The point here is this: foundational reliability need not be exclusively a matter of the factual basis for the opinion. In reaching an assessment that an expert's opinion is—or is not—reliable, court and counsel may also take up issues that relate to the underlying methodology and science.

More to the point, what helps demonstrate that a trial court's ruling admitting or excluding evidence is not an abuse of discretion? Here, the *Sentinel* decision is particularly helpful. First, the court held a *Frye* hearing to determine whether or not the testimony was admissible. Second, during that hearing, the court permitted "extensive voir dire" of Mr. Hatfield.<sup>65</sup> Third, the record demonstrated that Mr. Hatfield had relied upon more than the four test samples in reaching his conclusion that all of Kellogg Square was contaminated, also considering his own visual inspection of the building, his interviews with building managers, and his review of work orders for repairs. As the court noted, "Hatfield inspected hundred of work orders for replacing light bulbs, shower curtain rods, and closet door tracks—maintenance which can also gouge the ACMs [asbestos containing materials] and release dust

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64. *Goeb*, 615 N.W.2d at 816.

65. *Sentinel*, 615 N.W.2d at 824.

containing asbestos fibers.”<sup>66</sup> In short, the court was satisfied that the expert had done his homework.

It is tempting to compare the expert in *Sentinel* with those in *Goeb*. However tempting, in the end, the comparison is false because it is inapplicable. Reading *Goeb* as a decision that excludes testimony from experts who have failed to read medical records is a misreading of the decision. At the point of appeal, the question is not whether the experts have done their homework. Instead, the question becomes whether the appellate court can find evidence in the record to support the trial judge’s ruling. It is not the homework that is important here, it is the appellate court’s satisfaction.

Cases are not litigated, however, at the point of appeal. What should happen during litigation and trial to help insure that the trial court’s determination about reliability will be upheld on appeal? The processes used in *Goeb* and *Sentinel* are surely a good starting point for answering this question. Assuming that the reliability of an expert opinion is at issue, a determination of reliability will be less likely to be disturbed on appeal if:

- There has been an evidentiary hearing in limine concerning the expert’s opinion.
- There was an opportunity for that expert to testify and be cross-examined.
- There was also an opportunity for opposing experts to testify and be cross-examined.
- The trial judge issues written findings on the question of reliability.

This all has implications for lawyers, of course, as well as trial judges. Prudent lawyers will ask for the appropriate processes and prepare appropriate draft findings.

#### B. *When Is Science Generally Accepted?*

One of the most important questions left after the decisions in *Goeb* and *Sentinel Management* is the definition of “general acceptance.” As the court itself put it:

- does the court look to general acceptance of a technique or

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66. *Sentinel*, 615 N.W.2d at 825. The court also, unfortunately, made note of the fact that New Hampshire “failed to put forward an expert of its own to counter Hatfield’s testimony.” *Id.* While that fact may be worthy of note, it ought have no bearing on whether the proffered expert’s testimony has sufficient foundational reliability to be admitted into evidence.

the general acceptance of the underlying scientific principle;  
—who is the relevant scientific community; and  
—what is general acceptance—a majority, or a credible minority?<sup>67</sup>

The court did not offer any explicit illumination of these three facets of general acceptance, or otherwise attempt to provide a definition of general acceptance. Instead, the court said simply, "...because the law is continuously evolving, answers to these questions will be set forth in case law as the issues properly present themselves."<sup>68</sup>

Nonetheless, *Goeb* and *Sentinel* do provide some clues about how these questions may be answered, once the issues have properly presented themselves. As to nature of the first facet of general acceptance, there is at least a hint in *Goeb* that the court may be willing to look at the general acceptance of a scientific technique, rather than confining its review to analysis of scientific principle. Though the exclusion of testimony in *Goeb* ultimately turned on the question of reliability, the court did address, albeit briefly, defendant Dow's challenge to the general acceptance of the experts' methodology. At the heart of Dow's challenge lay the argument that determination of the level of chemical exposure was a necessary prerequisite to determining causation. In reaching a conclusion about this argument, the court said, "[w]hile we recognize the discord regarding the necessity of chemical exposure levels for establishing causation, we need not decide what the generally accepted methodology would be because the second prong of the *Frye-Mack* standard is dispositive here."<sup>69</sup> The experts' approach, using factors other than exposure levels, to determine causation seems more a question of technique than of principle.<sup>70</sup>

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67. *Goeb*, 615 N.W.2d at 813, citing Paul C. Gianelli, "The Admissibility of Novel Scientific Evidence: *Frye v. U.S.*, a Half-Century Later, 80 COLUM. L. REV. 1197, 1205.

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

69. *Id.* at 815.

70. It is not clear, however, where "scientific technique" leaves off and "foundational reliability" takes up. Because of the different standards for review, the question is not simply academic. For example, assume a trial judge has reached a decision, following a *Frye* hearing, to exclude a particular expert's opinion on causation. The central reason for the decision to exclude has to do with the expert's failure to explain why a plaintiff's illness was not caused by an environmental factor other than the complained-of exposure to PCB's. The expert has reviewed the plaintiff's medical records and offered a plausible explanation as to why smoking was not the cause of plaintiff's cancer. The expert has not, however, ruled out any other factors, such as alcohol ingestion or iron

The second element of general acceptance, the identity of the relevant scientific community, is less problematic. While the court did not expressly define those parameters in *Goeb*, clues abound. For example, plaintiffs proffered Dr. Kilburn as an expert in neurotoxicological testing and Dr. Sherman as a medical doctor expert in toxicology and environmental medicine. Dow's motion to exclude the testimony relied on affidavits from experts in other fields who, in part, disputed plaintiffs' expert's qualifications to testify on matters relating to neurology and clinical neuropsychology.<sup>71</sup> What determines the borders of the relevant community will depend more on the issues of the particular case, rather than the field of study of the particular expert. The critical factor determining the identity of the relevant community will be the factual or legal issue on which the expert will opine. For example, the general acceptance of the science used by an expert in toxicology need not be determined exclusively by reference to what other toxicologists think. The opinions of an expert called to testify on the issue of causation can be fairly challenged by experts from other fields who also have the education and experience needed to testify about that issue.

The third facet of general acceptance presents greater challenges. What is the tipping point at which science moves from being cutting-edge, and perhaps even reliable, to generally accepted? What will happen if, as was the case with DNA typing, the court is again presented with a powerful technology that has not yet been generally accepted? Our court has said that "general acceptance" is the standard, but if there seems to be a need to move at least slightly from that austere standard, will there be room to move? *Goeb* gives small room on this point indeed, offering little more than an open question as to whether a "credible minority" might be sufficient to constitute general acceptance. If we look back to some of the courts earlier decisions in this area, however, there seems to be somewhat more room provided.

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other factors, such as alcohol ingestion or iron deficiency. Has the expert relied on a methodology that is not generally accepted, or does her testimony lack foundational reliability? Under the *Goeb/Sentinel* approach, a trial judge may well want to characterize the defect as one of foundational reliability, since that ruling is subject to appellate review only on an abuse of discretion standard. A ruling that the expert's methodology is not generally accepted, even if supported by testimony from defendant's experts, would be reviewed by the appellate court de novo. *In re Paoli*, 2000 WL 274262 at \*5 for a federal judge's approach to this scenario. Of course, under *Daubert*, there is no need for the federal judge to consider whether or not the questioned methodology is generally accepted.

71. *Goeb*, 615 N.W.2d at 807-08.



When the court last reaffirmed the *Frye-Mack* standard, in *Schwartz*, it did so in the context of considering the admissibility of what was then an “emerging scientific technique,” DNA testing.<sup>72</sup> At that time, the court clearly expressed its fidelity to the *Frye-Mack* standard, requiring that experts “in the field generally agree that the evidence is reliable and trustworthy” before novel scientific evidence may be admitted.<sup>73</sup> At the same time, in reaching its conclusion that DNA testing was generally accepted, the court looked to considerations other than whether a majority of scientists ratified the technique. For example, the court expressly took note of:

- The fact that DNA testing is used for diagnostic purposes within many scientific disciplines;
- The known rate of error of the laboratory performing the analysis;
- The existence of laboratory protocols; and,
- The validity of testing procedures and principles as assessed in the scientific community through publication in peer review journals.<sup>74</sup>

These are, of course, the same type of factors used in *Daubert* and *Downing* to assess reliability.<sup>75</sup>

The willingness of the court to consider the “credibility” of support for an emerging technique, rather than simply count noses, is also apparent in *State v. Fenney*, a case decided at nearly the same time as *Schwartz*.<sup>76</sup> In *Fenney*, the court took up the question of the admissibility of electrophoretic typing of dried blood. In considering the “acceptance and reliability within the relevant

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72. *State v. Schwartz*, 447 N.W.2d 422 (Minn. 1989).

73. *Id.* at 424.

74. *Id.* at 425-27.

75. Though the *Schwartz* court looked to these factors principally to determine whether to admit the particular test results, the court’s analysis in *Schwartz* does not really follow a strict two-prong analysis. The court ultimately reaches a conclusion that seems a blend of the two step approach articulated in *Goeb*:

While we agree with the trial court that forensic DNA typing has gained general acceptance in the scientific community, we hold that admissibility of specific test results in a particular case hinges on the laboratory’s compliance with appropriate standards and controls, and the availability of their testing data and results.

*Schwartz*, 447 N.W.2d at 428. This blended approach is hardly surprising given the *Schwartz* court’s articulation of the standard. “We have rephrased the *Frye* standard to require that experts in the field generally agree that the evidence is reliable and trustworthy.” *Schwartz*, 447 N.W.2d at 424.

76. *State v. Fenney*, 448 N.W.2d 54 (Minn. 1989).

community” of this technology, the court examined:

- The existence of appropriate and properly controlled scientific investigations;
- The risk of error;
- The training and experience of the analysts conducting the testing procedure;
- The awareness of those analysts of published literature warning of typing problems; and,
- The control protocols used by the testing laboratory.<sup>77</sup>

Again, this is an analysis that smacks of *Daubert* and *Downing*, suggesting that general acceptance need not turn on the existence of a majority of support, but may instead be determined by examining the credibility of a supporting minority of scientists. It is possible, of course, that *Goeb/Sentinel* herald a return to a more austere definition of general acceptance. That need not be the case, however. If confronted with a new and powerful technology not yet ratified by at least fifty-one percent of practicing scientists, the court has room to roam from a “majority-rules” approach to general acceptance.

### C. *What About Evidence That Is Expert But Not Scientific?*

One of the most significant questions floating in the legal firmament following *Daubert* was whether or not the *Daubert* approach would also be adopted for situations outside the arena of novel scientific evidence. This past term, the United States Supreme Court answered that question affirmatively, making reliability the standard for the admissibility of all types of expert testimony, whether based on scientific, technical or other specialized knowledge.<sup>78</sup> Will the approach for evaluating expert testimony articulated in *Goeb/Sentinel* extend to non-scientific evidence? The supreme court may already have answered this question, but recent developments suggest that it may be a question that the court needs to revisit.

In *State v. Klawitter*, our supreme court considered the admissibility a drug recognition protocol based, in part, on “horizontal gaze nystagmus testing.”<sup>79</sup> A state trooper testifying as a witness in the case used the protocol as the basis for his testimony that the de-

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77. *Id.* at 58-61.

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

79. *State v. Klawitter*, 518 N.W.2d 577 (Minn. 1994).

fendant was under the influence of a controlled substance. In reviewing the admissibility of the testimony, the court stated:

We begin our analysis with the proposition that, properly viewed, the protocol followed by Trooper Daly is not itself a scientific technique but rather a list of the things a prudent, trained and experienced officer should consider before formulating or expressing an opinion whether the subject is under the influence of some controlled substance.<sup>80</sup>

The court reasoned in much the same way when evaluating the trooper's conclusion based on the protocol. "Basically, however, following the protocol does not involve any scientific skill or training of the part of the officer."<sup>81</sup> The court did recognize that nystagmus testing involved science of a sort, and affirmed the trial judge's ruling that nystagmus tests satisfied the *Frye* standard.<sup>82</sup> In the end, however, the court concluded that it believed that this expert testimony "did not demand the kind of scrutiny required for the presentation of some novel scientific discovery or technique."<sup>83</sup> The court stressed that nystagmus testing had been "in common medical use without change for many years." In addition, the court pointed out that nystagmus tests were simple to administer and "do not require the use of complicated equipment."<sup>84</sup> It may be that the testing did not warrant a *Frye* level scrutiny because of its simplicity or lack of novelty. Nonetheless, the logic of the holding in *Klawitter* suggests that Minnesota will use the *Goeb/Sentinel* approach and the *Frye-Mack* standard only when considering the admissibility of some emerging technique making use of "hard science"—the kind of science that does require the use of complicated equipment and sophisticated gizmos. In all other situations, presumably, the test for the admissibility of expert witness testimony is reliability.<sup>85</sup>

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80. *Klawitter*, 518 N.W.2d at 584.

81. *Id.* at 585.

82. *Id.* at 584-85. Interestingly, the court ruled that "the trial judge did not abuse her discretion or arrive at a clearly erroneous conclusion in determining that the nystagmus test satisfied the *Frye* standard." *Goeb/Sentinel* suggests, of course, that the standard for review is now *de novo*.

83. *Klawitter*, 518 N.W.2d at 585.

84. *Id.* at 584.

85. For a somewhat similar approach to the consideration of expert testimony that is scientific, but is neither novel nor predicated on hard science that requires the use of complicated equipment, see *State v. Moore*, 458 N.W.2d 90 (Minn. 1990). *Moore* upheld the admissibility of blood splatter evidence. The court noted that blood splatter interpretation was not an emerging science such as DNA or elc-

If that is the import of *Klawitter*, the court would be well-advised to revisit that issue. The court has told us that one of the advantages of the *Frye-Mack* standard is the promotion of uniformity. If that is so, then recent events suggest that the Minnesota bench and trial bar are in need, or will be shortly, of some guidance from the supreme court about the admissibility of expert testimony that uses no complicated equipment, but instead relies on the softer sciences of anthropology, sociology, and psychology.

In the past two years, the supreme court has, on several occasions, had the opportunity to opine on propriety of a trial judge's exclusion of expert testimony that might loosely be called "social framework" testimony. The proffered testimony has been expert testimony that seeks to explain why it might be that a particular individual would say things, do things, or make decisions that appear irrational or inexplicable to the average lay juror. In each instance, the trial judge has chosen to exclude the testimony and, in each instance, the supreme court has held that the trial judge's ruling was not an abuse of discretion.<sup>86</sup> All fine and good, we might suppose, but that gives little comfort to the judge who is considering admitting such testimony and little guidance to the lawyer who would like to make use of such testimony. The best, and perhaps only, way for the court to provide this guidance is to consider whether or not, in a well-chosen case where the proffered testimony appears particularly useful and particularly reliable, such evidence is generally accepted.<sup>87</sup>

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trophoretic typing, but still noted the general acceptance of the technique. *Moore*, 458 N.W.2d at 98 n.6. The court also pointed out that the only equipment required for the testimony was string, thumbtacks, and masking tape.

86. *State v. Bjork*, 610 N.W.2d 632, 637 (Minn. 2000) (affirming trial court exclusion of evidence about the violent nature of prison environment to bolster claim of self-defense); *State v. Nystrom*, 596 N.W.2d 256, 260-61 (Minn. 1999) (affirming trial court exclusion of evidence that, because of the high crime in the community, it was reasonable for a young person living in north Minneapolis to so fear for his life that he would make a preemptive strike); *State v. Ritt*, 599 N.W.2d 802, 810-12 (Minn. 1999) (upholding trial court exclusion of evidence explaining the psychological dynamics and coercive nature of particular police interrogation technique); *Bixler v. State*, 582 N.W.2d 252, 254-56 (Minn. 1998) (upholding trial court exclusion of psychological testimony about the defendant's susceptibility to coercion and the involuntary nature of his confession). What's that you say? Four cases don't make a trend? In fact, consideration of this type of testimony is the evidentiary issue the court has dealt with the most frequently in the last two years. With the exception of governmental immunity, it is the *legal* issue the court has dealt with the most frequently in the last two years, even outstripping the sufficiency of affidavits in medical malpractice cases!

87. There is nothing particularly radical about this suggestion. The suggested

IX. ALL IS FOR THE BEST IN THIS, THE BEST OF ALL POSSIBLE  
JURISDICTIONS

The court's rejection of *Daubert* in *Goeb and Sentinel* can be read as an attempt to give the Minnesota trial bench and bar the best of both worlds: *Frye-Mack* consistency coupled with *Daubert*-style gatekeeping. In an area of evidence law where so many predictions have been so wrong, it may seem foolhardy to add one more. On the other hand, one more hardly hurts. The *Goeb/Sentinel* approach strikes an admirable balance of responsibility between the appellate and trial bench. In the years to come, the use—or at least attempted use—of experts who base opinions on the cutting edge, outside margin, or lunatic fringe of science is likely to increase. Because of the approach adopted in *Goeb/Sentinel*, Minnesota trial judges will be able to serve as effective gatekeepers in their own courtrooms and remain largely unencumbered by appellate court second-guessing. Appellate judges (and justices, of course) will be able to use the *de novo* standard of review of what is and is not generally accepted to create useful precedent that will promote uniformity in the admission or exclusion of testimony reliant upon novel science. The virtues of *Frye-Mack* will be retained, and the perils of *Daubert* will be avoided. Ah, we can dream dreams can't we?

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approach simply returns us all to our roots. Our test is the *Frye-Mack* test, after all, and *Mack* dealt with the admissibility of hypnotically reinforced testimony.

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