Frye Versus Daubert: Practically the Same?

Pamela J. Jensen

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Frye Versus Daubert: Practically the Same?

Pamela J. Jensen*

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* J.D. Candidate, 2004, University of Minnesota. I dedicate this Note, with loving gratitude, to Mark, Peter, Paul, Matthew, John, and Karen, and to the memory of Jeff. I thank my colleagues and editors at the Minnesota Law Review for good advice and patient assistance.
D. Interpretation of the Frye and Daubert Standards

INTRODUCTION

In U.S. state courts, two general standards presently co-exist for determination of admissibility of novel scientific expert testimony: the Frye standard and the Daubert standard.\(^1\) Scholars have provided numerous analyses of the merits and weaknesses of Frye versus Daubert,\(^2\) with some advocating for uniform adoption of Daubert,\(^3\) the standard of the federal courts.\(^4\) Much less attention has been focused on whether the two standards consistently lead to different results in the


\(^3\) See, e.g., Gildea, supra note 2, at 106-08 (urging the Minnesota Supreme Court to abandon Frye in favor of Daubert); S.J. Graham, supra note 2, at 261 (urging that New York move away from the general acceptance test of Frye to the reliability test of Daubert); Harley, supra note 2, at 506-08 (arguing for adoption of Daubert in Minnesota). But see Montz, supra note 2, at 114-15 (concluding that Frye remains the more reliable solution).

courtroom. The question asked in this Note is whether adherence to one or the other standard is determinative in decisions to admit or exclude three types of scientific evidence. The types of evidence evaluated are DNA profiling with the short-tandem-repeat polymerase-chain-reaction method (STR-PCR DNA); horizontal gaze nystagmus (HGN), a field sobriety test; and child sexual abuse accommodation syndrome (CSAAS). For each of these three types of scientific evidence, appellate decisions on admissibility are compared in states that follow *Frye* and those that follow *Daubert*. States were almost uniform in admitting STR-PCR DNA profiling evidence, whether they applied the *Frye* or *Daubert* standard. In contrast, there were striking differences in the state courts' decisions regarding admissibility of both HGN as well as CSAAS evidence. The differences, however, were not correlated with adherence to either the *Frye* or *Daubert* standard of admissibility.

Part I of this Note begins by comparing and contrasting the criteria for admissibility elaborated in the *Frye* and *Daubert* standards. Part II provides scientific background for the three types of evidence considered and also delineates the criteria by which states were chosen for analysis. Parts III, IV, and V discuss, compare, and contrast opinions admitting or excluding the three types of scientific evidence. Finally, Part VI suggests general patterns and factors that appear to influence admissibility of scientific evidence in *Frye* and *Daubert* states. The primary conclusion of this Note is that factors outside of those elaborated by the *Frye* and *Daubert* criteria have a larger influence than the standards themselves have on decisions of admissibility for at least some types of scientific evidence.

I. FRYE VERSUS DAUBERT: SIMILARITIES AND DIFFERENCES

The *Frye* standard, which was devised eighty years ago in a brief opinion by the Federal District Court of the District of Columbia, dictates that the principle or test that is offered "be sufficiently established to have gained general acceptance" within the relevant scientific community.\(^5\) In the original application of the *Frye* approach, the result of a systolic blood pressure deception test (a lie detector test) was held

\(^5\) *Frye*, 293 F. at 1014.
inadmissible.\textsuperscript{6} The courts, in extending \textit{Frye}'s applicability to virtually all types of scientific methodologies, made the \textit{Frye} standard the predominant test for admissibility of scientific evidence for much of the twentieth century.\textsuperscript{7}

In \textit{Daubert v. Merrell Dow Pharmaceuticals, Inc.},\textsuperscript{8} the Supreme Court held that the \textit{Frye} standard was superceded by Federal Rule of Evidence 702, which governs expert testimony.\textsuperscript{9} The Court could find nothing in the text or history of Rule 702 to suggest that it incorporated \textit{Frye}'s "general acceptance" standard.\textsuperscript{10} Furthermore, the Court believed \textit{Frye}'s rigid standard to be inconsistent with the "liberal thrust of the Federal Rules."\textsuperscript{11} In response to these concerns, the Court promulgated a new standard for admission of scientific expert testimony, focusing on relevance and reliability, which are prerequisites for admission of any kind of evidence.\textsuperscript{12} The Court clarified the reliability prong by stating that "[i]n a case involving scientific evidence, evidentiary reliability will be based upon scientific validity."\textsuperscript{13} The \textit{Daubert} Court charged the trial judge to undertake a "preliminary assessment of

\begin{enumerate}
\item Id. at 1013-14.
\item See, e.g., Paul C. Gianelli, \textit{The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later}, 80 COLUM. L. REV. 1197, 1205 & n.47 (1980); S.J. Graham, \textit{supra} note 2, at 233 & nn.17-18 (stating that at least thirty-three states used the \textit{Frye} standard during the twenty year period ending in 1995 and providing examples of the diverse types of scientific evidence to which \textit{Frye} has been applied).
\item 509 U.S. 579 (1993). The plaintiffs in \textit{Daubert} were two minor children and their parents, suing for birth defects allegedly caused by the mothers' ingestion of Bendectin, a prescription drug marketed by the defendant. \textit{Id.} at 582. \textit{Daubert} is applied in all federal courts. See, e.g., Horn, 185 F. Supp. 2d at 532 (applying \textit{Daubert} to the challenged admissibility of field sobriety tests, including horizontal gaze nystagmus).
\item FED. R. EVID. 702. At the time of the \textit{Daubert} decision, Rule 702 stated, "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." \textit{Daubert}, 509 U.S. at 588. Congress amended the Rule in 2000 in response to \textit{Daubert} and its progeny to add the following phrase: "if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." FED. R. EVID. 702 & advisory committee's note.
\item \textit{Daubert}, 509 U.S. at 588-89.
\item \textit{Id.} at 588.
\item \textit{Id.} at 589-92.
\item Id. at 590 n.9.
\end{enumerate}
whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." This "gatekeeping" role of the trial judge follows directly from Federal Rule of Evidence 104(a), which states that "[p]reliminary questions concerning...the admissibility of evidence shall be determined by the court." Finally, the Daubert Court provided some general guidelines to aid trial judges in determining whether particular scientific evidence is scientifically valid and serves as an aid to the jury in evaluating a fact in issue: (1) Can the scientific knowledge be tested or has it been tested; (2) has the "theory or technique...been subjected to peer review and publication"; (3) does the technique have a "known or potential rate of error"; and (4) is there "general acceptance" of the scientific technique. The fourth guideline is essentially the Frye standard.

The Frye and Daubert opinions have considerable commonality in their concerns and practical solutions. Both recognize the challenge in defining the point at which experimental science, which is constantly evolving, becomes sufficiently firm to aid in the resolution of a specific legal dispute. Most obvious with regard to their commonality is that the Frye "general acceptance" standard is one of the Daubert guidelines. But the importance of acceptance in the larger scientific community is not limited to only one of Daubert's specific guidelines. Acceptance is also an aspect of Daubert's definition of scientific knowledge: While "scientific' implies a grounding in the methods and procedures of science,” knowledge “applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds.” Furthermore, Daubert points out that the latitude granted expert witnesses in their testimony is “premised on an assumption that the expert’s opinion will have a reliable basis

14. Id. at 592-93.  
15. Id. at 592, 597.  
17. Daubert, 509 U.S. at 592-94.  
18. See id. at 594; Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923).  
19. Daubert, 509 U.S. at 597; Frye, 293 F. at 1014.  
20. Daubert, 509 U.S. at 594; Frye, 293 F. at 1014.  
21. Daubert, 509 U.S. at 590 (quoting Webster's Third New International Dictionary 1252 (1986)).
in the knowledge and experience of his discipline."\(^{22}\) In a recent application of Daubert, the Supreme Court stated that the judicial gatekeeping function "is to make certain that an expert . . . employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."\(^{23}\) Thus Daubert and its progeny incorporate the concepts of factual knowledge, experience, and intellectual rigor appropriate to a scientific discipline. This incorporation suggests that the Daubert standard does indeed give considerable deference to the generally accepted dimensions and definitions of scientific expertise.

In spite of the above similarities between Frye and Daubert, controversy over the relative merits and weaknesses of each has been voluminous and intense. Many judges and other scholars have criticized Frye for placing too much responsibility for decisions regarding admissibility of scientific evidence in the hands of scientists, who are uneducated in the law.\(^{24}\) Since the only question under Frye is whether the principle or test has attained the level of "general acceptance" in the relevant scientific community,\(^{25}\) some argue that the judge has essentially abdicated his role to the scientists.\(^{26}\) Conversely, others have opined that the Daubert standard puts judges in the "position of being amateur scientists and determining the reliability of information."\(^{27}\) At least some

\(^{22}\) Id. at 592.


\(^{24}\) See, e.g., State v. Coon, 974 P.2d 386, 395-96 (Alaska 1999) (suggesting, in an opinion that replaced the Frye standard with the Daubert standard, that "[t]he notion that scientists are better suited than judges for assessing scientific reliability may appear initially persuasive, given that trial judges are rarely trained in science . . . [but c]loser consideration reveals that the notion is misleading and irrelevant"); Gildea, supra note 2, at 108 (suggesting, in a comparison of Frye and Daubert standards, that "[t]he Daubert standard recognizes that trial judges, not scientists or technicians, are best suited to decide what evidence is admissible"); Harley, supra note 2, at 507-08 ("The heyday of Frye is long past. The Federal Rules of Evidence hailed an era of judicial responsibility in which it is no longer appropriate for judges to abdicate decision-making to the scientific community.").

\(^{25}\) Frye, 293 F. at 1014.

\(^{26}\) See, e.g., supra note 24 and accompanying text.

\(^{27}\) Holmgren, supra note 2, at 599 (paraphrasing Chief Justice Rehnquist's dissent in Daubert, 509 U.S. at 600-01); Milich, supra note 2, at 919 ("Scientists who have spent [most] of their professional lives wrestling with the complexities and mysteries of their disciplines must be amazed at the law's hubris in thinking that non-scientist judges can 'get up to speed' on a scientific dispute and ultimately decide who has the better of the argument."
judges, including Judge Kozinski, who presided over the 
Daubert trial on remand from the Supreme Court, have found 
this a daunting task:

The first prong of Daubert puts federal judges in an uncomfortable 
position.

. . . .

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."  

Hence, in simplistic terms, the controversy over 
admissibility of scientific evidence has often been framed as a 
question of who should have control: judges, who usually know 
little about science, or scientists, who usually know little about 
law and the legal system.

II. TYPES OF SCIENTIFIC EVIDENCE AND STATES 
CHOSSEN FOR ANALYSIS

This Note examines three types of scientific evidence on 
which both Frye and Daubert jurisdictions have ruled in the 
past decade to look for patterns with regard to decisions on 
admissibility. Part II.A, immediately below, describes the 
scientific background behind these three types of evidence. 
Part II.B details the criteria by which states were chosen for 
analysis.

A. SCIENTIFIC BACKGROUND

The three types of scientific evidence chosen for analysis

Montz, supra note 2, at 106 (noting the "paradoxical assumption [in Daubert] 
that trial judges, as gatekeepers, can effectively and competently apply their 
level of scientific knowledge to determine the reliability of all sciences . . . as 
well or conceivably better than each individual well-credentialed scientist who 
proffers their [sic] evidence"); Tamarelli, supra note 2, at 1202-03 ("Our 
system should not contemplate that judges and juries can make amateur 
assessments of the merits of new research. That work should be left to the 
more capable scientific community.").

28. Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1315-16 (9th Cir. 
1995). Justice Breyer echoed these concerns in his concurring opinion in 
General Electric Co. v. Joiner, which stated that the judge's gatekeeper role 
"will sometimes ask judges to make subtle and sophisticated determinations 
about scientific methodology," and that "judges are not scientists and do not 
have the scientific training that can facilitate the making of such decisions." 
are: DNA profiles using the PCR-STR technique, horizontal
gaze nystagmus (HGN) as a field sobriety test, and child sexual
abuse accommodation syndrome (CSAAS). DNA methodologies
are highly technical, "hard" science. HGN testing is based on
measurement of a clinical ocular response. CSAAS is an
example of psychological science, developed by astute
observation of human behavior and thus in the category of
"soft" science.

1. PCR-STR DNA Profiles

DNA evidence is well established in the courtroom, and the
power of DNA profiling as a unique molecular identifier is
seriously questioned neither by prosecutors nor by defense
attorneys. But science is rarely static. Progress in
molecular biology is continually pushing the basic DNA
methodology in new and unexpected directions, and these new
techniques for analyzing DNA have elicited numerous

29. David McCord, Syndromes, Profiles, and Other Mental Exotica: A New
Approach to the Admissibility of Nontraditional Psychological Evidence in
Criminal Cases, 66 OR. L. REV. 19, 21 n.2, 29-30 (1986) (discussing the
distinction between "hard" and "soft" sciences).
30. NAT'L TRAFFIC LAW CTR., AM. PROSECUTORS RESEARCH INST.,
31. McCord, supra note 29, at 21 n.1, 27 (describing psychological
methods of research, i.e., observation of individuals, correlation of behaviors,
and inference).
32. See, e.g., State v. Grant, No. CR6481390, 2002 WL 853627, at *5
(Conn. Super. Ct. Apr. 9, 2002) ("[N]uclear DNA evidence is so generally
accepted at the present time by advocates on all sides of the criminal justice
system that a successful challenge to the general methodology of DNA testing
would be unlikely in the extreme."); People v. Castro, 545 N.Y.S.2d 985, 989
(N.Y. Sup. Ct. 1989) ("[I]t is clear that there is general scientific acceptance of
the theory underlying DNA identification."). Richard Lempter, in After the
DNA Wars: Skirmishing with NRCII, 37 JURIMETRICS J. 439 (1997), writes,
DNA is an extremely valuable identification technique—far better, for
example, than eyewitness testimony, which is often treated as
dispositive in determining "who did it!" I know no critic of DNA
evidence who wants to return to a pre-DNA world. All, I think, agree
that DNA evidence leads to more correct convictions of the guilty and
fewer mistaken convictions of the innocent than occurred before
DNA's arrival on the scene.

Id. at 441.
33. See, e.g., People v. Basler, 740 N.E.2d 1, 4 (Ill. 2000) (affirming, in the
context of HGN testing, that newly acquired information requires
reexamination of the validity of scientific tests); COMM. ON DNA FORENSIC
SCI., NAT'L RESEARCH COUNCIL, THE EVALUATION OF FORENSIC DNA
developing DNA profiling methods).
questions in the courts. One important new DNA profiling technique, known as the polymerase chain reaction (PCR) method, has the advantage of requiring a much smaller sample than the initial methods used in DNA forensic analysis. An accurate description of PCR is “molecular Xeroxing,” in that a very small amount of DNA is used as a template to form numerous exact copies, thereby allowing analysis of the minute amounts of DNA to be found on many forensic samples (e.g., traces of saliva on a cigarette butt). Other advantages of PCR are that a single sample can be divided for replicate testing in several laboratories (since such small amounts of material are needed for analysis) and that even degraded DNA, which for example is likely to be found in a decayed body, is often suitable for analysis. PCR is sufficiently different in methodology and in its sources of error from the original DNA forensic techniques that the courts have appropriately taken a hard look at its applicability to the judicial process.

PCR does not refer to a single forensic technique, but rather to a variety of possible procedures, depending on which segment of the DNA is to be amplified. This Note focuses on one particular PCR-based method, known as PCR-STR, for PCR-short-tandem-repeats. As their name implies, STRs are short sequences of DNA that are repeated many times in a row. STRs are common, are widely distributed in the genome, and are coming into widespread use in forensic science.

2. Horizontal Gaze Nystagmus (HGN)

In contrast to the highly technical methodology of DNA typing, the second technique considered in this Note, known as
horizontal gaze nystagmus (HGN), relies on very simple technology—a pen.\textsuperscript{43} HGN is typically administered by a police officer as part of a field sobriety test for individuals suspected of driving under the influence of alcohol: The officer holds a pen or similar object in front of the driver, moves it slowly from side to side, and observes the movement of the subject’s eyes as they attempt to follow the moving object.\textsuperscript{44} Normally, the subject’s eyes follow the moving object smoothly; however, if he or she has ingested alcohol or certain other drugs, the eyes exhibit an involuntary jerking motion as they attempt to follow the object.\textsuperscript{45} This jerking motion is known as a nystagmus. A study sponsored by the National Highway Traffic Safety Administration “determined that the HGN test was seventy-seven percent accurate in detecting whether an individual’s [blood alcohol content] was .10 or higher.”\textsuperscript{46} Although jurisdictions have taken varied approaches to the question of admissibility of HGN evidence, most state courts consider HGN a scientific test and apply their usual standards for admissibility of scientific evidence.\textsuperscript{47}

3. Child Sexual Abuse Accommodation Syndrome (CSAAS)

The third type of testimony to be examined, Child Sexual Abuse Accommodation Syndrome (CSAAS), is drawn from the study of human behavior.\textsuperscript{48} Clinical studies have shown that children who have been sexually abused exhibit a typical profile of behavior that is counterintuitive to adult expectations.\textsuperscript{49} There are five characteristics of the CSAAS profile. First, the child is secretive about the abuse: “The average child never asks and never tells. . . . [This is] [c]ontrary

\textsuperscript{43} Nat’l Traffic Law Ctr., supra note 30, at 12.
\textsuperscript{44} Id. at 12-14.
\textsuperscript{45} Id. at 4-5. Alcohol is a central nervous system depressant that affects numerous motor control systems, including reflexes, hand movements, and body posture, as well as eye movements. Id. at 5 (citing Jack E. Richman & John Jakobowski, The Competency and Accuracy of Police Academy Recruits in the Use of the Horizontal Gaze Nystagmus Test for Detecting Alcohol Impairment, 47 New. Eng. J. Optometry 5, 6 (Winter 1994)).
\textsuperscript{47} Nat’l Traffic Law Ctr., supra note 30, at 19-22.
\textsuperscript{49} Id. at 180-81.
to the general expectation that the victim would normally seek help.”

Second, the child appears helpless: “The normal reaction [of the child] is to ‘play possum’ . . . . Small creatures simply do not call on force to deal with [the] overwhelming threat” of a much larger and more powerful adult. Third, the child exhibits signs of entrapment and accommodation: “The only acceptable alternative for the [sexually abused] child is to believe that she has provoked the painful encounters and to hope that by learning to be good she can earn love and acceptance.”

Fourth, when the child does speak about the abuse, her disclosure is “delayed, conflicted and unconvincing.” Finally, the child is likely to retract her initial statements about sexual abuse, often because she feels responsible for the aftermath.

Professionals who counsel sexually abused children are often asked to testify in court proceedings in order to help the fact finder understand the victim’s behavior, which seems not only incongruous but also dishonest. Such testimony cannot prove that any particular child was abused, much less whether the defendant was the abuser, but it can help a jury to understand inconsistencies in the victim’s story.

CSAAS is an example of a psychological syndrome that has been developed and studied in the context of professional clinical observations of and interactions with similarly afflicted individuals. Such behavioral studies are not readily amenable to testing via the standard scientific method, where a hypothesis is formulated, experimentally tested with known error rates, and then objectively accepted or rejected based on the experimental data. Therefore, knowledge based on experience and observation, such as CSAAS, presents admissibility challenges distinct from more technical knowledge; nonetheless, in many jurisdictions, both types of

50. *Id.* at 181.
51. *Id.* at 183.
52. *Id.* at 184.
53. *Id.* at 186.
54. *Id.* at 188.
56. *Id.* at 947-48.
expertise are evaluated by the same admissibility standard.58

B. CRITERIA FOR CHOOSING STATES FOR ANALYSIS

This Note compares state court opinions after 1993 from Frye and Daubert jurisdictions regarding admissibility of the three scientific techniques described in the previous section. In each case, one party offered scientific testimony and the other party objected to the offering. In all but one case, the dispute reached the appellate level. The analysis is focused on states that followed the Frye standard prior to the Supreme Court's decision in Daubert.59 These states are divided into two groups for comparison: those that continued to follow Frye after the Daubert decision (Frye states) and those that at some time after 1993 switched to a Daubert standard in line with the Supreme Court's ruling (Daubert states). Limiting the analysis to states that followed the Frye standard, at least immediately prior to the Supreme Court's holding in Daubert in 1993, creates a baseline from which differences should be more readily discernable after the switch to Daubert.

The majority of states analyzed adhere to a rule of evidence similar or identical to Federal Rule of Evidence 702, Testimony by Experts.60 Most states also share other, more general rules of evidence.61 Particularly relevant are state rules analogous to Federal Rules of Evidence 104(a) and 403. These rules place squarely on the court the responsibility for addressing preliminary questions of admissibility, taking into account not just the probative value of any evidence but also any dangers of

58. See, e.g., McCord, supra note 29, at 82-88 (opining that the Frye test is inappropriate for psychological and other "soft" scientific evidence); Steele, supra note 55, at 954-57.

59. Before the Daubert decision, most states followed Frye. See supra note 7.

60. See supra note 9 (providing the text of Federal Rule of Evidence 702, in both pre-2000 and amended post-2000 forms); Hamilton, supra note 1, at 210-13 (providing a table listing the states that have adopted Federal Rule of Evidence 702 or a similar variant thereof). The three states that have not adopted a rule similar to Federal Rule of Evidence 702 are Massachusetts, New York, and Pennsylvania. Id. Connecticut adopted Rule 702 in 2000 (after the Hamilton Note was published). CONN. CODE OF EVID. § 7-2.

61. See, e.g., Barbara C. Salken, To Codify or Not to Codify—That Is the Question: A Study of New York’s Efforts to Enact an Evidence Code, 58 BROOK. L. REV. 641, 641-42 & n.2, 658 n.124 (1992) (listing the thirty-four states that have adopted the Federal Rules of Evidence); S.J. Graham, supra note 2, at 255 & n.145 (“Evidence codes based on the Federal Rules of Evidence have been adopted by thirty-four states.”).
unfair prejudice or confusion that its admission might raise.\textsuperscript{62} Thus the framework of evidentiary principles, under which either \textit{Frye} or \textit{Daubert} standards must function, is very similar in nearly all of the states analyzed.\textsuperscript{63}

In the following sections, court decisions with regard to each of the chosen scientific techniques (PCR-STR DNA profiling, HGN, and CSAAS) are compared and contrasted in \textit{Frye} and \textit{Daubert} jurisdictions, with particular attention to the rationale that each court used in arriving at its decision. For each type of evidence, this Note analyzes nearly all appellate decisions on admissibility after 1993 from states that meet the criteria described above. The types of scientific techniques analyzed herein were chosen because appellate courts in several \textit{Frye} and \textit{Daubert} states had considered the question of their admissibility as novel scientific evidence.

III. DNA PROFILES USING THE PCR-STR METHOD

A. \textit{DAUBERT} STATES ADMIT PCR-STR DNA EVIDENCE

Many courts have ruled on the admissibility of PCR-STR DNA profiling since 1997, when the first appellate case to address this technique was reported in Massachusetts.\textsuperscript{64} In upholding a first degree murder conviction, the Supreme Court of Massachusetts held PCR-STR DNA evidence admissible under the \textit{Daubert} standard.\textsuperscript{65} The holding was based largely

\textsuperscript{62} Federal Rule of Evidence 104(a) reads in relevant part, “Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court.” Federal Rule of Evidence 403 provides that relevant evidence may be excluded by the court if “its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury.”

\textsuperscript{63} See, e.g., Margaret A. Berger, \textit{The Federal Rules of Evidence: Defining and Refining the Goals of Codification}, 12 HOFSTRA L. REV. 255, 256 (1984); supra notes 60-61 and accompanying text. States which have not adopted a text similar or identical to the Federal Rules of Evidence are identified in the discussions of the opinions from those states.

\textsuperscript{64} Commonwealth v. Rosier, 685 N.E.2d 739, 743 (Mass. 1997).

\textsuperscript{65} \textit{Id.} at 741. Massachusetts has followed the \textit{Daubert} standard for admissibility of scientific evidence since 1994, when the state supreme court indicated its choice of \textit{Daubert} over its previous \textit{Frye} standard. Commonwealth v. Lanigan, 641 N.E.2d 1342, 1348-49 (Mass. 1994). Massachusetts does not have a codified law of evidence. Salken, \textit{supra} note 61, at 642 n.2. However, the state supreme court in \textit{Lanigan} noted that Rule 702 of the Massachusetts Proposed Rules of Evidence was identical to Federal Rule of Evidence 702. 641 N.E.2d at 1348.
on positive comments from the National Research Council about the forensic utility of the test and from nonjudicial experience with the test in identifying the remains of soldiers killed in Operation Desert Storm in 1991.66

Connecticut followed its neighbor to the north in admitting PCR-STR DNA evidence several years later.67 After a hearing prompted by defendant's motion to exclude such evidence from his murder trial, the Superior Court of Connecticut issued a strong statement of approval of PCR-STR DNA testing:

Scientific research is a national—or global—phenomenon, and there is no need for a court in one state to disregard the judicial decisions of other jurisdictions. While a single appellate decision in one state does not automatically settle the issue, at some point the combined weight of judicial and scientific opinion achieves the critical mass of persuasive authority. With respect to STR evidence... that point has now been reached. There is overwhelming evidence that the STR technique has gained general acceptance. This conclusion should end the court's inquiry, and the conclusions derived from that methodology should be held admissible.68

This Daubert court reached its conclusion (which, in its reliance upon general acceptance sounds very much like a Frye decision) after consideration of a number of factors: the testimony of a supervisor at the State Forensic Science Laboratory,69 conclusions reached by the 1996 NRC Report and

66. Rosier, 685 N.E.2d at 743. The court noted several conclusions of the National Research Council: PCR-STR is “coming into wide use,” “STR loci appear to be particularly appropriate for forensic use,” and PCR-STR testing is similar in principle to the previously accepted and widely used methodologies. Id. (quoting NRC DNA REPORT, supra note 33, at 35, 71, 117). The court also noted that, although the defendant had questioned the reliability of PCR-STR, he offered “no specific scientific or forensic evidence or literature... to support” his contention. Id.


68. Grant, 2002 WL 853627, at *7 (citations omitted). This holding suggests that the general acceptance inquiry was determinative, even though Connecticut follows the Daubert standard. Such a view is consistent with an observation of the Massachusetts Supreme Court, which also held that Daubert was the appropriate state standard: “We suspect that general acceptance in the relevant scientific community will continue to be the significant, and often the only, issue.” Lanigan, 641 N.E.2d at 1349.

69. Grant, 2002 WL 853627, at *1-*2.
numenous other, peer-reviewed publications;\textsuperscript{70} and appellate
decisions in several other states.\textsuperscript{71} At the end of the opinion,
"[i]n the event that a reviewing court should disagree with [the]
conclusion,"\textsuperscript{72} the court briefly mentioned a few \textit{Daubert}
factors. Specifically, the PCR-STR technique was reliable and
objectively verifiable, with a low rate of error and well-defined
standards; it was initially developed for research, not for
purposes of adjudication.\textsuperscript{73} Thus the Connecticut court
conducted a \textit{Daubert} analysis, but appeared to rely most
strongly on the general acceptance test in admitting PCR-STR
dNA evidence.

\textbf{B. \textit{Frye} States Admit PCR-STR DNA Evidence}

Beginning in 1998, many appellate courts in \textit{Frye} states
confronted PCR-STR DNA evidence; nearly all ruled favorably
on its admissibility.\textsuperscript{74} Nebraska was the first \textit{Frye} state to
address PCR-STR DNA evidence in a published opinion, which
arose in the context of an unsuccessful appeal of a first degree
murder conviction.\textsuperscript{75} After a \textit{Frye} hearing at which a
pathologist and a scientist with extensive DNA experience
testified, the trial court concluded that the state had met its
burden of establishing general acceptance both of PCR-STR
DNA methods and of the specific PCR-STR test procedure used
on the defendant's samples.\textsuperscript{76} The Nebraska Supreme Court
agreed, holding that "the PCR STR DNA test used in the
instant case was generally accepted within the scientific
community."\textsuperscript{77} The supreme court further found that the test
was conducted properly, according to the established protocol,
based on trial testimony by the laboratory technician who

\textsuperscript{70} Id. at *4.
\textsuperscript{71} Id. at *6.
\textsuperscript{72} Id. at *7.
\textsuperscript{73} Id.
\textsuperscript{74} People v. Hill, 107 Cal. Rptr. 2d 110, 117-19 (Cal. Ct. App. 2001);
People v. Allen, 85 Cal. Rptr. 2d 655, 659 (Cal. Ct. App. 1999); Yisrael v. State,
827 So. 2d 113, 114-15 (Fla. Dist. Ct. App. 2002); Lemour v. State, 802 So. 2d
WL 473847, at *7 (Minn. Feb. 24, 2003); State v. Salmon, 89 S.W.3d 540, 545
(Mo. Ct. App. 2002); State v. Jackson, 582 N.W.2d 317, 325 (Neb. 1998); State
court opinion, see People v. Owens, 725 N.Y.S.2d 178, 180, 182 (N.Y. Sup. Ct.
2001).
\textsuperscript{75} Jackson, 582 N.W.2d at 324-25.
\textsuperscript{76} Id. at 322, 324, 325.
\textsuperscript{77} Id. at 325.
performed the test. Several other jurisdictions that adhere to the Frye type of admissibility test have followed Nebraska's lead.

California, Florida, New York, Minnesota, Missouri, and New Jersey, all of which follow the Frye standard, admitted PCR-STR DNA evidence between 1999 and 2003. The courts in each case cited the general acceptance of PCR-STR DNA in the relevant scientific community, although the New York court pointed out that "general scientific acceptance, not universal acceptance, is required." Nearly all the courts heard testimony from expert witnesses familiar with the technique, but the training of the expert called to testify varied from state to state. The various expert witnesses ranged from a deputy director of the company that conducted the DNA test, in the California court; to a professor of genetics, in the Missouri court; to state forensic scientists, in the Missouri and New Jersey courts. At least three courts also mentioned the large number of scientific and/or forensic publications concerning PCR-STR technology and use. In Deloatch, the

78. Id. at 325-26.
79. Hill, 107 Cal. Rptr. 2d at 119; Allen, 85 Cal. Rptr. 2d at 659; Yisrael, 827 So. 2d at 114-15; Lemour, 802 So. 2d at 406-08; Traylor, 2003 WL 473847, at *13; Salmon, 89 S.W.3d at 545; Deloatch, 804 A.2d at 613; Owens, 725 N.Y.S.2d at 180, 182. California follows the Frye standard, as described in People v. Kelly. 549 P.2d 1240, 1244-45 (Cal. 1976). Minnesota follows a double prong Frye standard in which the first prong asks whether the novel scientific technique is "generally accepted within the relevant scientific community," and the second prong asks "whether the laboratory conducting the tests in the individual case complied with appropriate standards and controls." State v. Roman Nose, 649 N.W.2d 815, 818-19 (Minn. 2002). New Jersey retains the Frye standard of admissibility for criminal cases, although it adheres to the Daubert standard for toxic tort claims. State v. Harvey, 699 A.2d 596, 621 (N.J. 1997); Deloatch, 804 A.2d at 613. New York follows Frye, but has not codified its laws of evidence. Owens, 725 N.Y.S.2d at 180, 182; Salken, supra note 61, at 642 n.2.
80. Supra note 79.
82. Allen, 85 Cal. Rptr. 2d at 659; Yisrael, 827 So. 2d at 114; Lemour, 802 So. 2d at 406; Traylor, 2003 WL 473847, at *6; Salmon, 89 S.W.3d at 544-45; Deloatch, 804 A.2d at 605.
83. Allen, 85 Cal. Rptr. 2d at 659.
84. Salmon, 89 S.W.3d at 544-45.
85. Id.; Deloatch, 804 A.2d at 605.
86. Traylor, 2003 WL 473847, at *6 & nn.5-6; Lemour, 802 So. 2d at 405-06; Deloatch, 804 A.2d at 610. The Lemour court singled out the NRC DNA Report as particularly compelling in Florida: "The Florida Supreme Court views the NRC reports as authoritative sources on DNA forensic use."
New Jersey court noted that the defense had offered neither any specific criticism nor any expert testimony.\textsuperscript{87} Finally, all the courts cited decisions from other jurisdictions that had previously admitted PCR-STR DNA evidence.\textsuperscript{88} Thus, the seven \textit{Frye} states discussed above have addressed PCR-STR DNA testing and have found it to be admissible, in agreement with the two \textit{Daubert} states previously discussed.\textsuperscript{89}

IV. HORIZONTAL GAZE NYSTAGMUS (HGN)

Numerous \textit{Frye} and \textit{Daubert} jurisdictions have ruled on the admissibility of HGN testing as evidence of intoxication or impairment.\textsuperscript{90} In all but one case discussed in this section (and in nearly all cases involving HGN evidence), the state has charged the defendant with driving under the influence of alcohol.\textsuperscript{91}

A. \textbf{DAUBERT STATES DIFFER WITH REGARD TO ADMISSIBILITY OF HGN EVIDENCE}

Two \textit{Daubert} states have recently reached opposite conclusions regarding the admissibility of HGN.\textsuperscript{92} In South

\begin{itemize}
  \item \textit{Lemour}, 802 So. 2d at 405 n.7.
  \item \textit{Deloatch}, 804 A.2d at 606.
  \item People v. Hill, 107 Cal. Rptr. 2d 110, 117-18 (Cal. Ct. App. 2001); Allen, 85 Cal. Rptr. 2d at 659; Traylor, 2003 WL 473847, at *7; \textit{Lemour}, 802 So. 2d at 405; \textit{Salmon}, 89 S.W.3d at 545; \textit{Deloatch}, 804 A.2d at 612; Owens, 725 N.Y.S.2d at 181-82.
  \item See supra Parts III.A & B. At least two other states, which do not fit the criteria established for this Note, have also admitted PCR-STR DNA evidence. The supreme courts of Colorado and Utah admitted PCR-STR DNA evidence on the basis of their respective state rules of evidence regarding expert testimony, which are both identical to the pre-2000 Federal Rule of Evidence 702. COLO. R. EVID. 702; UTAH R. EVID. 702; People v. Shreck, 22 P.3d 68, 77 & n.10, 82-83 (Colo. 2001); State v. Butterfield, 27 P.3d 1133, 1139, 1143 (Utah 2001). See supra note 9 for the text of the pre-2000 and amended Rule 702.
  \item See, e.g., United States v. Horn, 185 F. Supp. 2d 530, 551-53, 561 (D. Md. 2002). States have almost uniformly excluded HGN testing as evidence of a specific blood alcohol level, as opposed to evidence of alcohol consumption, intoxication, and/or impairment. See, e.g., \textit{id.} at 534 & n.10.
  \item Occasionally, states have considered HGN as evidence of impairment by drugs other than alcohol. See, e.g., State v. Baity, 991 P.2d 1151, 1153 (Wash. 2000). \textit{Baity} is the only opinion discussed in this Note that considered HGN as a test for intoxication by drugs other than alcohol. See \textit{id.} at 1153, 1158-59.
Dakota, the supreme court admitted HGN after an interlocutory appeal from the prosecutor. The state presented three witnesses at a pretrial Daubert hearing: the officer administering the test, a training director for state law enforcement, and an optometrist. The court cited not only the expert testimony but also legal precedent in holding that "HGN testing is nationally recognized as a reliable field sobriety test and if it can be shown that the test was properly administered by a trained officer, such evidence should be admitted for a jury to consider at trial."

New Mexico had a different view. In *State v. Torres*, the New Mexico Supreme Court held that the trial court erred in admitting HGN testing because the state did not show the evidentiary reliability of such testing. Similar to the South Dakota Supreme Court, the New Mexico court considered HGN as scientific evidence that must meet the evidentiary reliability standard of Daubert. Since the “trial court did not consider any of the required factors for assessing the evidentiary reliability of HGN testing,” the supreme court found reversible error in the decision to admit the testimony of the officer who administered the test. The court stated that testimony from police officers, who in general are not experts with regard to the scientific basis of HGN testing, cannot establish the reliability of the test. The court expounded stringent requirements for the officer’s testimony, noting that it adopted the Daubert standard in *State v. Hofer*, 512 N.W.2d 482, 484 (S.D. 1994). New Mexico rejected Frye as a “controlling standard of admissibility” at approximately the same time, citing with favor the Daubert criteria. See *State v. Alberico*, 861 P.2d 192, 202-04 (N.M. 1993) (quoting United States v. Downing, 753 F.2d 1224, 1237 (3d Cir. 1985)).

93. See *Hullinger*, 649 N.W.2d at 254.
94. See id. at 255.
95. Id. at 260-61.
96. See *Torres*, 976 P.2d at 23; *Lasworth*, 42 P.3d at 844.
97. 976 P.2d at 23.
98. See *Hullinger*, 649 N.W.2d at 258 n.3.
99. See *Torres*, 976 P.2d at 28, 30.
100. Id. at 31.
101. See id. at 32. That the officer had training and experience with HGN testing in practice was not denied, but was considered “not sufficiently probative of the test’s evidentiary reliability.” Id. The officer could testify about the “administration and specific results” of the test “provided that another, scientific expert first establishes the evidentiary reliability of the scientific principles underlying the test.” Id. at 34.
“did not explain how the test proved intoxication.” 102 Finally, the court refused to take judicial notice of HGN testing as it is not “a subject of common and general knowledge . . . [nor a matter] that is well established and authoritatively settled.” 103

The New Mexico Supreme Court in Torres did not decide “whether HGN testing is adequately valid from a scientific point of view.” 104 A subsequent appellate decision from New Mexico, however, excluded HGN evidence in spite of the prosecution’s offering of additional testimony with regard to its scientific reliability. 105 No doubt mindful of the court’s holding in Torres, 106 the prosecution in State v. Lasworth offered as an expert witness Dr. Marcelline Burns, a psychologist who has experience in the development, validation, and administration of HGN testing and who had previously testified as an expert witness concerning HGN in more than half of the states. 107 After receiving the testimony of this expert witness and reviewing her published works, the Lasworth court found that HGN “arguably has been scientifically validated” to identify drivers whose blood alcohol level is above the statutory limit, but it “has not been scientifically validated as a direct measure of impairment.” 108 The court’s antagonism toward the expert witness’ testimony and toward HGN testing in general was only thinly concealed. 109

102. Id. at 33. At present no expert testimony can explain how HGN proves intoxication. Such explanation would require a biological mechanism linking alcohol consumption and impairment with ocular physiology, a path that science cannot as yet delineate.

103. Id. (quoting Rozelle v. Barnard, 382 P.2d 180, 181 (N.M. 1963)).

104. Id.


106. See supra note 101 and accompanying text.


108. Id. at 848. This holding is nearly the opposite of most courts, which accept HGN testing as a measure of impairment but not as a determinant of any particular blood alcohol content. See supra note 90.

109. See Lasworth, 42 P.3d at 849. “Evidence that Dr. Burns was qualified in the abstract to design and conduct studies of HGN does not mean that she in fact designed and conducted scientifically sound studies. . . . [T]he court could not be sure the results obtained by Dr. Burns and other HGN researchers were not a ‘coincidence.’” Id. The court also questioned the statistical significance of some of the validation studies on which the National Highway Traffic Safety Administration relied. Id. In the published opinion there is no indication that the defense countered the prosecution’s claims concerning HGN with its own experts. Id. at 847-50. The court seemed to rely on one general source for its cautionary note that “even the highest quality
In *State v. Pjura*, an appellate court adhering to *Daubert* issued an opinion similar to the New Mexico Supreme Court opinion in *Torres*.\(^{110}\) The court declined the state's invitation to "declare that the HGN test has gained general acceptance in the scientific community" or to decide "whether the HGN test meets the *Daubert* standard for scientific validity."\(^{111}\)

Thus of the three *Daubert* states that meet this Note's criteria, one (South Dakota) has embraced HGN evidence, one (New Mexico) has excluded it, and one (Connecticut) has declined to take judicial notice.\(^{112}\)

### B. MOST *FRYE* STATES ADMIT HGN EVIDENCE

In 2000, the Nebraska Supreme Court overruled its previous decision\(^{113}\) and held that "the HGN . . . test meets the *Frye* standard for acceptance in the relevant scientific

[scientific] journals sometimes publish work that is later found to be wrong." *Id.* (quoting 1 David L. Faigelman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony* § 1.3.3.3 (1997)). The immediately preceding statement seems to suggest an antagonism toward scientific evidence that goes beyond this particular expert and this technique.

\(^{110}\) See *State v. Pjura*, 789 A.2d 1124, 1134 (Conn. App. Ct. 2002); *State v. Torres*, 976 P.2d 20, 32-33 (N.M. 1999); *supra* note 101 and text accompanying notes 98-104. The *Pjura* court found that *State v. Russo*, 773 A.2d 965 (Conn. App. Ct. 2001), was dispositive. *Pjura*, 789 A.2d at 1131-33. In *Russo*, the court held that HGN was scientific evidence that must satisfy the *Daubert* standard for admissibility prior to admission of the testimony of the police officer who administered the test. 773 A.2d at 969.

\(^{111}\) *Pjura*, 789 A.2d at 1133.

\(^{112}\) A fourth *Daubert* state that meets the criteria of this Note is West Virginia. See *State v. Wyatt*, 489 S.E.2d 147, 158-59 (W. Va. 1996); *Wilt v. Buracker*, 443 S.E.2d 196, 200-03 (W. Va. 1993). West Virginia's view of HGN is hard to discern at present, apparently reflecting a divided supreme court. In the most recent relevant West Virginia Supreme Court decision, Judge Starcher wrote a separate concurring opinion "to point out that despite intimations to the contrary in . . . the Court's opinion in the instant case, West Virginia law does not permit the admission of . . . [HGN] evidence as substantive evidence of intoxication, without the reliability of the HGN evidence being shown." *State v. Dilliner*, 569 S.E.2d 211, 218 (W. Va. 2002) (Starcher, J., concurring). Judge Starcher agreed with the *Torres* court in New Mexico that "[t]he training of a police officer to perform HGN observations and evaluations does not provide the officer with the expert qualifications to establish HGN evidence's scientific reliability." *Id.* at 224; see *supra* note 101 and accompanying text. The concurrence was willing to admit HGN evidence without a separate and individualized showing of reliability only for the purpose of showing probable cause for arrest for driving under the influence. *Dilliner*, 569 S.E.2d at 224.

communities, and when the test is given in conjunction with other field sobriety tests, the results are admissible for the limited purpose of establishing that a person has an impairment which may be caused by alcohol.”

The court was persuaded by three expert witnesses who testified for the state in a pretrial evidentiary hearing: a research psychologist, a professor of optometry, and the director of training for the Nebraska State Patrol. In addition to accepting the scientific principles on which HGN testing is based, the court concluded that the police officer who administered the HGN test could testify to the results obtained, and the only foundation needed for his testimony was to show “that the officer has been adequately trained in the administration and assessment of the HGN test and has conducted the testing and assessment in accordance with that training.”

Several other Frye states have reached a conclusion similar to that of Nebraska with regard to HGN. In State v. Hill, decided in 1993, the Missouri Court of Appeals held HGN admissible as evidence of intoxication. Recently, in the face

114. State v. Baue, 607 N.W.2d 191, 204 (Neb. 2000). In Baue, Nebraska used the Frye standard for admissibility of scientific evidence, the standard in effect at that time. Id. However, a year after Baue was decided, the Nebraska Supreme Court held that Nebraska would follow Daubert as of October 1, 2001. See Schaferman v. Agland Coop, 631 N.W.2d 862, 866 (Neb. 2001).

115. See Baue, 607 N.W.2d at 201-04. The expert research psychologist, Dr. Marcelline Burns, was the same one who testified for the Daubert state of New Mexico in State v. Lasworth, where her reception was considerably less positive. 42 P.3d 844, 846-47; see supra notes 105-09 and accompanying text.

116. Baue, 607 N.W.2d at 205.

117. See Ballard v. State, 955 P.2d 931, 934-36, 939, 942 (Alaska Ct. App. 1998); People v. Joehnk, 42 Cal. Rptr. 2d 6, 7 (Cal. Ct. App. 1995); State v. Klawitter, 518 N.W.2d 577, 584-85 (Minn. 1994); State v. Rose, 86 S.W.3d 90, 97-99 (Mo. Ct. App. 2002); State v. Hill, 865 S.W.2d 702, 704 (Mo. Ct. App. 1993), overruled on other grounds en banc by State v. Carson, 941 S.W.2d 518, 520 (Mo. 1997); State v. Baue, 607 N.W.2d 191, 204 (Neb. 2000); State v. Baity, 991 P.2d 1151, 1158-59 (Wash. 2000). In Baity the issue was intoxication by a drug other than alcohol. See id. at 1153, 1159; supra note 91. The Baity court held that HGN testing satisfied the Frye test, but limited its opinion to situations in which HGN testing was just one part of a twelve step drug recognition protocol. See Baity, 991 P.2d at 1159-60.

118. See Hill, 865 S.W.2d at 704. The Missouri court found that the HGN test had reached the level of “general acceptance within the behavioral science community.” Id. Marcelline Burns, Ph.D., the same psychologist who later testified for judicial proceedings in Nebraska, New Mexico, and other states on the background, administration, and interpretation of HGN, testified for the prosecution in Hill. See id. at 703-04; supra notes 109, 115 and accompanying text.

Missouri adheres to a Frye standard as expounded in Alsbach v. Bader,
of a defendant's direct challenge to reverse Hill, the Missouri Court of Appeals affirmed the admissibility of HGN evidence, as long as the test was performed properly by a trained officer. 119 Minnesota, California, Alaska, and Washington admitted HGN evidence between 1994 and 2000; the HGN evidence was admitted in each case after expert witnesses testified at a Frye hearing. 120 The Minnesota Supreme Court acknowledged that HGN was not universally accepted as a test of drug impairment; nonetheless, the court was convinced by testimony that the test was simple, required no elaborate instrumentation, and had been in "common medical use without change for many years." 121 A California appellate court agreed, concluding that "a consensus drawn from a typical cross-section of the relevant, qualified scientific community accepts the HGN testing procedures... as a useful tool" in assessing intoxication. 122

A few Frye states have taken judicial notice of HGN. 123 In 1995 Maryland's appellate court took "judicial notice of the reliability and acceptance of the HGN test," holding that results of the test were admissible in the state's courts without a Frye hearing. 124 Although the trial court had not conducted a

700 S.W.2d 823, 828 (Mo. 1985) (en banc).
119. See Rose, 86 S.W.3d at 97-99.
120. See Ballard, 955 P.2d at 934-36, 939, 942; Joehnk, 42 Cal. Rptr. 2d at 7, 17; Klawitter, 518 N.W.2d at 578-79, 584-85; Baity, 991 P.2d at 1158-59.
121. Klawitter, 518 N.W.2d at 584-85. The Minnesota court believed that the real issue with regard to HGN testing was not admissibility, but rather weight, a prerogative appropriately left to the jury. Id. at 585.
122. Joehnk, 42 Cal. Rptr. 2d at 17. A year prior to the Joehnk decision, the California Supreme Court had declined to take judicial notice of HGN, ruling that the trial court should conduct a thorough Frye hearing to determine admissibility. See People v. Leahy, 882 P.2d 321, 334-35 (Cal. 1994).
124. Schultz, 664 A.2d at 69. The authority of the court to take judicial notice of a scientific technique was recognized in Reed v. State:

On occasion, the validity and reliability of a scientific technique may be so broadly and generally accepted in the scientific community that a trial court may take judicial notice of its reliability. Such is commonly the case today with regard to ballistics tests, fingerprint identification, blood tests, and the like.

Id. at 70-71 (quoting Reed v. State, 391 A.2d 364, 367 (Md. 1978)). The Schultz court further explained that "[j]udicial notice of a fact is an acceptable substitute for formal proof of such fact, when formal proof is clearly unnecessary to enhance the accuracy of the fact-finding process." Id. at 71
Frye inquiry\textsuperscript{125} and the state offered only one witness, the arresting officer,\textsuperscript{126} the court was convinced by the support in the scientific literature for HGN and by its adoption in most other jurisdictions that had addressed its admissibility.\textsuperscript{127} Florida and Michigan courts of appeals published similar opinions in 1996 and 1998 respectively.\textsuperscript{128}

In contrast to the nine Frye states described above which have ruled in favor of HGN admissibility, four Frye states within the same time period have declined to admit HGN evidence.\textsuperscript{129} In 2000 New Jersey declined to "take judicial

\textsuperscript{125} See id. at 61.
\textsuperscript{126} See id. at 62.
\textsuperscript{127} See id. at 74.
\textsuperscript{128} See Williams, 710 So. 2d at 32; Berger, 551 N.W.2d at 424 & n.2. The Michigan court held that "the prosecution was not required to present expert testimony concerning the validity of HGN because the test had "gained general acceptance in the scientific community." Berger, 551 N.W.2d at 424. Although the trial court in Florida may not have formally conducted a Frye analysis, it did conduct a hearing on defendant's motion to exclude HGN evidence, at which time both the prosecution and the defense presented several expert witnesses. See Williams, 710 So. 2d at 26-28. The trial court found that Frye was not applicable to HGN testing because, although HGN was considered scientific, it was neither new nor novel. Id. at 29. The appellate court labeled HGN as "quasi-scientific" and agreed that it was not new or novel. Id. at 30. Because it was neither new nor novel, a Frye analysis was not required: "We hold that where a scientific principle has been established and generally accepted in the relevant scientific community, and has also been Frye tested in the legal community, it is no longer 'new or novel' and there is simply so need to reapply a Frye analysis." Id. at 31-32. As in Minnesota, the Florida appellate court acknowledged that HGN was not universally accepted, but the court was convinced of the accuracy and reliability of the test by the numerous witnesses, by the voluminous medical literature concerning the effects of intoxicants on the body, as well as by supportive case law. Id. at 35. In contrast, the dissent found HGN test results unreliable and appeared unwilling to admit them for any purpose. Id. at 48-49 (Cope, J., dissenting in part).

notice of the general acceptance of HGN testing in the scientific community based upon . . . independent review of authoritative, scientific and legal writings and those judicial opinions from other jurisdictions that have accepted HGN testing.”

While acknowledging the conservative nature of its approach as well as the possibility that HGN testing might meet the Frye standard, the New Jersey court insisted that the issue first be thoroughly litigated in a New Jersey trial court, with expert witnesses establishing a Frye foundation.

In arriving at its conclusion, the New Jersey court appeared to rely heavily on an eight-year-old decision from the Kansas Supreme Court, which likewise declined to rule on HGN admissibility under the Frye standard until a Kansas trial court had an “opportunity to examine, weigh, and decide disputed facts to determine whether the test is sufficiently reliable to be admissible for any purpose in Kansas.” In 1998, the Kansas Supreme Court echoed its earlier ruling: “[W]e are not satisfied that [HGN] testing has achieved general acceptance within the relevant scientific community.”

Another Frye state reluctant to admit HGN is Pennsylvania, where on two occasions since 1993, the superior court has reversed the trial courts’ admissions of this type of evidence. In Commonwealth v. Moore, the appellate court did not agree that HGN testing was generally accepted “in the field of medical science represented by ophthalmology.” Two years later, when HGN admissibility was again in dispute in Pennsylvania, the prosecution offered the testimony of an optometrist. Nonetheless, the appellate court remained unconvinced that HGN testing was generally accepted in the scientific community, finding that the optometrist’s testimony was “largely based on his own personal views and

130. Doriguzzi, 760 A.2d at 337.
131. Id. at 342, 345.
132. Id. at 342-45 (quoting State v. Witte, 836 P.2d 1110, 1121 (Kan. 1992)). In Witte, the State argued that HGN was not scientific evidence and therefore Frye was not relevant, and, in the alternative, that HGN was scientific evidence that satisfied Frye. 836 P.2d at 1113. The State relied on its only witness (the arresting officer) and precedent from other states to make its ultimately unsuccessful case that HGN evidence was reliable. Id. at 1117, 1121.
133. Chastain, 960 P.2d at 761.
134. Stringer, 678 A.2d at 1203; Moore, 635 A.2d at 629.
135. 635 A.2d at 629.
136. Stringer, 678 A.2d at 1201.
observations." Like Pennsylvania, Mississippi has excluded HGN evidence, although the rationale for the latter state's exclusion is hard to discern. Thus, out of a total of thirteen Frye states that meet the criteria of this Note, four states have excluded and nine have admitted HGN evidence. Of the four

137. Id. at 1202-03 (quoting Commonwealth v. Apollo, 603 A.2d 1023, 1028 (Pa. Super. Ct. 1992)).

138. In a case of first impression, the Mississippi Supreme Court held that the HGN test is a scientific test. The potential of a juror placing undue weight upon testimony about the administration of the test is high. . . .

Therefore, this Court finds that the HGN test is not generally accepted within the scientific community and cannot be used as scientific evidence to prove intoxication or as a mere showing of impairment. Young v. City of Brookhaven, 693 So.2d 1355, 1360-61 (Miss. 1997). Unfortunately, the court did not provide any further explanation for its rationale. See id. The Mississippi court's opinion that HGN testing is not generally accepted does not logically follow from its fear that the jury may place undue weight on this type of testimony. See id. These are two distinct inquiries that the court seems to have melded.

The Alaska Court of Appeals has harshly criticized the Mississippi Supreme Court's Brookhaven decision: "The Mississippi court's reasoning is simply confused. . . . There was no factual or logical basis for the Mississippi court's conclusion that the principles underlying HGN are not generally accepted in the scientific community." Ballard v. State, 955 P.2d 931, 938 n.6 (Alaska Ct. App. 1998).

139. Frye states admitting HGN evidence are Alaska, California, Florida, Maryland, Michigan, Minnesota, Missouri, Nebraska, Washington. See supra Part IV.B. Frye states excluding HGN evidence are Kansas, Mississippi, New Jersey, and Pennsylvania. See id.

The situation with regard to HGN admissibility in another Frye state, Illinois, remains confusing. In 2000 a plurality in the Illinois Supreme Court stated that since the HGN test

[is] no longer "novel" in any meaningful sense . . . the State should not be put to the burden of having to reestablish the test's validity in every case. . . . Where, as here, a scientific method has been shown to be generally accepted, a Frye test is no longer necessary each time the State seeks to use evidence obtained by that method.

People v. Basler, 740 N.E.2d 1, 4 (Ill. 2000) (internal citations omitted). In reaching this decision, the court cited the routine use of HGN in prosecutions for driving under the influence and two Illinois appellate court decisions allowing HGN under the relevant Frye standard. Id. (citing People v. Wiebler, 640 N.E.2d 24, 27 (Ill. App. Ct. 1994); People v. Buening, 592 N.E.2d 1222, 1227-28 (Ill. App. Ct. 1992)). The Basler plurality also expressly overturned an appellate decision from the third district, which had suggested that a Frye hearing was needed in each case. Basler, 740 N.E.2d at 4 (overturning People v. Kirk, 681 N.E.2d 1073 (Ill. App. Ct. 1997)).

Although one might reasonably conclude from the Basler decision that HGN admissibility is settled in Illinois, such is not the case. Two concurring justices in Basler concluded that since the "defendant waived any argument
Daubert states considered under the same criteria, only one has clearly held that HGN evidence is admissible in its state courts.140

V. CHILD SEXUAL ABUSE ACCOMMODATION SYNDROME (CSAAS)

Admissibility of CSAAS has been addressed in at least two contexts: as direct evidence of the credibility of the victim's allegations of abuse and as rebuttal evidence following an attack on the victim's credibility.141 The great majority of courts have rejected CSAAS as direct evidence of the credibility of a victim's allegations of abuse, both because of fears that such testimony would infringe on the jury's role as fact finder as well as because the evidence did not meet the prevailing admissibility standards of Frye or Daubert.142 In contrast to

140. Of the Daubert states, South Dakota has admitted HGN, New Mexico has excluded it, and Connecticut and West Virginia apparently remain undecided. See supra Part IV.A.
141. See, e.g., State v. Foret, 628 So. 2d 1116, 1127-31 (La. 1993).
142. See, e.g., id. at 1127-29. Foret was a case of first impression in which the Louisiana Supreme Court analyzed admissibility of CSAAS under Daubert.
this negative view of CSAAS as direct evidence of sexual abuse, many jurisdictions have judged CSAAS more favorably when it has been offered as rebuttal evidence to rehabilitate the victim-witness.\textsuperscript{143}

A. \textit{Daubert} States Differ with Regard to Admissibility of Rebuttal CSAAS Evidence

In Louisiana, the supreme court admitted CSAAS to rebut attacks on the victim's credibility.\textsuperscript{144} Specifically, the court ruled that the expert may explain, in general terms, certain behavior characteristics of abused children, in order to help the jury understand reactions to abuse that seem inappropriate and may be used to attack the victim's credibility.\textsuperscript{145} The most common characteristics of abused children at issue in the courtroom are recantation of statements and delayed reporting of the abuse.\textsuperscript{146} The Louisiana Supreme Court seemed to treat

and \textit{Frye} standards, and cited several reasons for its exclusion of CSAAS as direct evidence of abuse. Id. at 1125-29. The court noted that CSAAS did not have diagnostic value and was devised to aid in treatment of the victims of sexual abuse, quoting the psychiatrist who first published on CSAAS:

CSAAS acknowledges that there is no clinical method available to distinguish "valid" claims from those that should be treated as fantasy or deception, and it gives no guidelines for discrimination. . . . CSAAS is used appropriately in court testimony not to prove a child was molested but to rebut the myths which prejudice endorsement of delayed or inconsistent disclosure.

Id. at 1124-25 (quoting \textit{SUMMIT, ABUSE OF THE CHILD SEXUAL ABUSE ACCOMMODATION SYNDROME} 160).

Another early opinion on CSAAS stated, "Credibility . . . is for the jury—the jury is the lie detector in the courtroom." United States v. Azure, 801 F.2d 336, 340 (8th Cir. 1986) (quoting United States v. Barnard, 490 F.2d 907, 912 (9th Cir. 1973)).


144. \textit{Foret}, 628 So. 2d at 1129-30. In \textit{Foret}, the Louisiana Supreme Court abandoned \textit{Frye} in favor of the \textit{Daubert} standard. Id. at 1123. The court based its decision to adopt \textit{Daubert} on the similarity between Federal Rule of Evidence 702 and its Louisiana counterpart. \textit{LA. CODE EVID. ANN.} art. 702 (West 1995); \textit{Foret}, 628 So. 2d at 1123. As another aspect of its rationale for adopting \textit{Daubert}, the Louisiana Supreme Court noted that it had previously granted greater discretion to the trial judge with regard to admissibility of scientific evidence, consistent with the \textit{Daubert} standard and with a loosening of the strict \textit{Frye} general acceptance test. \textit{Foret}, 628 So. 2d at 1123 (citing State v. Catanese, 368 So. 2d 975, 983 (La. 1979)).

145. \textit{Foret}, 628 So. 2d at 1129-30.

146. Id. at 1129 (citing Elizabeth Vaughan Baker, Comment, \textit{Psychological Expert Testimony on a Child's Veracity in Child Sexual Abuse Prosecutions}, 50 \textit{LA. L. REV.} 1039, 1046 (1990)).
CSAAS evidence, when used in this way, as opinion testimony and therefore not subject to Frye or Daubert admissibility tests.\textsuperscript{147} A recent ruling from the Louisiana Court of Appeals relied heavily on Foret.\textsuperscript{148} The court did not rule on whether CSAAS would pass the Daubert standard, instead continuing to admit CSAAS for limited purpose as opinion evidence, which did not require a Daubert hearing.\textsuperscript{149}

Another Daubert state, South Dakota, admitted CSAAS testimony with the same limitations as Louisiana, but with a different rationale.\textsuperscript{150} The South Dakota Supreme Court allowed testimony describing the panoply of characteristics that sexually abused children share, but the court was careful to point out that the expert witness did not and would not have been permitted to testify as to the victim's credibility.\textsuperscript{151} The South Dakota Supreme Court differed from its Louisiana counterpart, however, in holding that CSAAS was scientific evidence that was evaluated and found admissible under the Daubert standard.\textsuperscript{152}

Kentucky has taken a very conservative course with regard to CSAAS evidence, disallowing its admission for any purpose, including rebuttal and rehabilitation of the victim-witness.\textsuperscript{153} A majority of the Kentucky Supreme Court rejected CSAAS evidence on the grounds that it "lacked relevancy and invaded the province of the jury by expressing an opinion on the ultimate issue of guilt or innocence."\textsuperscript{154} Although the court declined to decide whether CSAAS satisfied the Daubert standard for admissibility,\textsuperscript{155} the opinion's language makes such acceptance unlikely.\textsuperscript{156} The court found that the experts who testified were able to establish neither that CSAAS was "subject to testing for falsifiability or refutability" nor that it

\textsuperscript{147} Id. at 1130.
\textsuperscript{149} Id. at 429-31.
\textsuperscript{151} Id. at 423-24.
\textsuperscript{152} Id. at 422-23.
\textsuperscript{153} See Newkirk v. Commonwealth, 937 S.W.2d 690, 695-96 (Ky. 1996). The court "recognize[d] that some will regard this opinion as regressive and unenlightened." Id. at 695. Indeed, some of the court's own members appeared to hold this view. See id. at 696 (Graves, J., dissenting).
\textsuperscript{154} Id. at 695.
\textsuperscript{155} Id.
\textsuperscript{156} See id.
had a knowable or acceptable error rate, two “primary criteria” in the Daubert test. The court concluded that “the evidence in question appears to fall short of the Daubert standard for admissibility.”

Thus of the three Daubert states meeting this Note’s criteria, one (Louisiana) considers CSAAS evidence to be opinion rather than scientific, one (South Dakota) admits CSAAS only for rebuttal purpose to rehabilitate the victim-witness, and one (Kentucky) excludes CSAAS for any purpose. A similar range of opinions with regard to CSAAS is also found in states that follow the Frye standard, as described in the following section.

B. FRYE STATES DIFFER WITH REGARD TO ADMISSIBILITY OF REBUTTAL CSAAS EVIDENCE

The Michigan Supreme Court found that Frye was not applicable to CSAAS, because such “[s]yndrome evidence is
not a technique or principle that can predict abuse, but merely an expert's opinion that explains and describes probable responses to a traumatic event.\textsuperscript{161} In holding CSAAS to be merely an expert's opinion, not subject to prevailing standards of admissibility for scientific evidence, Michigan followed the path of Louisiana, a \textit{Daubert} state.\textsuperscript{162} However, whereas Louisiana admitted CSAAS evidence only to rehabilitate the victim-witness,\textsuperscript{163} the Michigan Supreme Court admitted CSAAS not only for rehabilitation, but also in the prosecution's case-in-chief to explain common but easily misunderstood characteristics of sexually abused children.\textsuperscript{164} The evidence was not admissible to prove that abuse actually occurred, nor could the expert give any opinion as to the victim's credibility or the defendant's guilt.\textsuperscript{165}

In Mississippi, the supreme court upheld a trial court's admission of testimony from the victim's physician, who provided evidence of not only physical but also behavioral characteristics suggestive of sexual abuse.\textsuperscript{166} The court did not label the testimony as CSAAS, apparently adhering to its earlier holding that "while testimony as to CSAAS is improper, is difficult to fit the behavioral professions within the application and definition of \textit{Davis/Frye}." 456 N.W.2d at 404.\textsuperscript{167}

Arizona followed a path similar to Michigan. \textit{See State v. Curry}, 931 P.2d 1133, 1138-39 (Ariz. Ct. App. 1996). The \textit{Curry} court held that an expert could testify as to behavioral characteristics that are common in sexually abused children without the need for a \textit{Frye} hearing, because such testimony was not "new, novel or experimental scientific evidence." \textit{Id.} at 1139 (quoting \textit{State v. Varela}, 873 P.2d 657, 663-64 (Ariz. Ct. App. 1993)). Unfortunately, the opinion did not make clear if a \textit{Frye} hearing was not required because CSAAS was not "new, novel or experimental" or, alternatively, because it was not "scientific." \textit{Id.; see also Varela}, 873 P.2d at 663-63. In spite of its decision that a \textit{Frye} test was not required, the \textit{Curry} court commented in a footnote that "[t]he \textit{Frye} test appears to have been satisfied." \textit{Id.} at 1139 n.1.\textsuperscript{168}

\textsuperscript{161} \textit{Peterson}, 537 N.W.2d at 864 (paraphrasing \textit{Beckley}, 456 N.W.2d at 410).
\textsuperscript{162} \textit{See supra} text accompanying notes 144-49.
\textsuperscript{163} \textit{Peterson}, 537 N.W.2d at 864.
\textsuperscript{164} \textit{Id.} at 868-69.
\textsuperscript{165} \textit{Id.} at 866.
\textsuperscript{166} \textit{State v. Crawford}, 754 So. 2d 1211, 1217-18 (Miss. 2000). Although Mississippi follows the \textit{Frye} standard, as recently affirmed in \textit{Gleeton v. State}, 716 So. 2d 1083, 1086-87 (Miss. 1998), it is not clear from the record if the trial judge in \textit{Crawford} applied \textit{Daubert} or \textit{Frye} in admitting the physician's testimony. 754 So. 2d at 1216. The supreme court held that the "testimony would pass muster under either \textit{Daubert} or \textit{Frye}" and that "[u]nder \textit{Frye}, [the physician's] testimony would be accepted within the medical community." \textit{Id.} at 1217.
testimony by an expert as to certain behavior common to sexually abused children is proper.” In spite (or perhaps because) of the lack of label, the Mississippi rulings were broad in that they allowed an expert to state whether the victim’s behavior shares characteristics with that of a sexually abused child and even to give an opinion as to whether the child has been sexually abused.

Florida has similarly tried to make a distinction between “syndrome” evidence and opinion evidence in cases of child sexual abuse, such as presented in Hadden v. State. Specifically, the court held that “[w]e differentiate pure opinion testimony based upon clinical experience from profile and syndrome evidence because profile and syndrome evidence rely on conclusions based upon studies and tests.” According to the court, testimony regarding CSAAS was considered syndrome evidence and was not admissible under Frye. In contrast, “pure opinion testimony” which is “personally developed” and “based solely on the expert’s training and [clinical] experience” did not have to pass the Frye test and could be admitted if consistent with the rules of evidence. Such a distinction would seem difficult and counterproductive to put into practice, particularly in areas of expertise encompassing psychology, psychiatry, and human behavior.

167. Hall v. State, 611 So. 2d 915, 919 (Miss. 1992) (relying on John E.B. Myers, Expert Testimony in Child Sexual Abuse Litigation, 68 NEB. L. REV. 1, 51, 62-65, 69 (1989)). The court in Hall distinguished testimony regarding a “syndrome” from testimony that simply describes behaviors commonly observed in sexually abused children. Id. at 918-19. The concern seemed to be that use of the word “syndrome” could create in the minds of the jurors the impression that behavioral characteristics of sexually abused children conform to a medical diagnosis, a proposition that is not widely held in the medical community. See id.; Myers, supra, at 69. In Hall, there is no mention of Frye or Daubert; rather, the court relied on Mississippi Rule of Evidence 702, which is comparable to its federal counterpart. Hall, 611 So. 2d at 920.

168. See Crawford, 754 So. 2d at 1217; Hall, 611 So. 2d at 919.

169. 690 So. 2d 573, 580 (Pla. 1997).

170. Id.

171. Id. at 578-79. In Hadden, CSAAS had been offered “to prove the alleged victim of sexual abuse exhibits symptoms consistent with one who has been sexually abused.” Id. at 575.

172. Id. at 579-80.

173. In Hadden, the court excluded testimony from a mental health counselor who testified that “based on his experience and training in child sex-abuse cases, the victim exhibited symptoms consistent with a child who had been sexually abused.” Id. at 575, 580. The court excluded his testimony because it was “based not only upon [his] experiences” but also upon his knowledge of syndromes and other diagnostic criteria and standards, which
A more recent appellate court opinion suggests that the effect of *Hadden* will be the general exclusion of evidence concerning behaviors of sexually abused children.\(^{174}\) In *Irving v. State* a Florida appellate court excluded testimony of a clinical psychologist who testified, based upon his experience and training, that the victim exhibited characteristics of a child who had been abused.\(^{175}\) Although the psychologist never used the word "syndrome" or "profile", the court believed that "his testimony may have been based upon CSAAS evidence, which was specifically found to be inadmissible in *Hadden*.\(^{176}\) Thus, while Florida, like Mississippi, has tried to distinguish CSAAS or syndrome evidence from pure opinion evidence, the practical effects of the distinction in the two *Frye* states are different: Florida has a restrictive policy of admission, while Mississippi has a broad policy of admission. Thus, the *Frye* states exhibit the same wide range of opinions with regard to CSAAS admissibility as do the *Daubert* states.
Table 1: State Decisions on Three Types of Scientific Evidence

<table>
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<th>Ruling</th>
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<th>Exclude</th>
<th>Undecided</th>
<th>Opinion*</th>
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* The court ruled that the evidence in question was not “scientific” but rather “opinion” evidence.

- a California, Florida, Minnesota, Missouri, Nebraska, New Jersey, New York
- b Connecticut, Massachusetts
- c Alaska, California, Florida, Maryland, Michigan, Minnesota, Missouri, Nebraska, Washington
- d Kansas, Mississippi, New Jersey, Pennsylvania
- e South Dakota
- f New Mexico
- g Connecticut, West Virginia
- h Mississippi
- i Florida
- j Michigan
- k South Dakota
- l Kentucky
- m Louisiana
VI. PATTERNS IN THE FRYE VERSUS DAUBERT COMPARISON

The results of this survey (summarized in Table 1) do not support the idea that Frye and Daubert admissibility standards lead to distinct practical outcomes, nor the view that the Frye standard in practice is more stringent than Daubert.\(^{177}\) The survey is far from exhaustive, being limited to only three types of scientific testimony and to states that followed Frye in 1993 and then either switched to Daubert or continued to follow Frye. Nonetheless, some patterns emerge.

A review of the results shows no correlation between application of one or the other standard and admissibility of any of the three types of scientific evidence examined (Table 1). Whether following Frye or Daubert standards, nearly all states admitted PCR-STR DNA evidence (Table 1). There was less consistency with regard to HGN and CSAAS evidence, but admission or exclusion did not appear to depend on the admissibility standard to which the courts adhered (Table 1). No comparison here presented suggests that Frye states were less likely to admit any of the types of evidence examined. Indeed the relatively large number of Frye states admitting PCR-STR DNA evidence and HGN evidence tends to belie this view (Table 1). Based solely on the opinions discussed in Parts III-V of this Note, several common factors emerge that may contribute to the patterns of admissibility discerned. These factors are discussed in the following section.

A. TYPES OF SUPPORTING/REFUTING EVIDENCE

Most courts readily accepted PCR-STR DNA evidence, in spite of the fact that the laboratory procedures involved were different in several ways from the original DNA tests used in judicial proceedings.\(^{178}\) A number of common arguments in

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177. See, e.g., State v. Foret, 628 So. 2d 1116, 1123 (La. 1993) ("It is not lost upon us that this new [Daubert] standard serves to remove some of the barriers in the admission of expert testimony in many fields, including child sexual abuse cases."); M.H. Graham, supra note 2, at 4 (suggesting that the Supreme Court attempted to liberalize admissibility standards in Daubert, but that in practice liberalization has not occurred); Barry C. Scheck, DNA and Daubert, 15 CARDOZO L. REV. 1959, 1996-97 (1994) (suggesting that "courts seem to assume that Daubert must always be a more liberal standard of admissibility than Frye"), cf. Montz, supra note 2, at 89 (suggesting that "the dilemma is that Daubert is both more and less restrictive of expert testimony").

178. See discussion supra Parts II.A.1, III.
support of admissibility run through the opinions concerning PCR-STR DNA evidence. Several courts mentioned favorably the NRC DNA Report, the guidelines from the Technical Working Group on DNA Analysis Methods (TWGDAM), the large number of peer-reviewed publications concerning PCR-STR DNA techniques from scientific and forensic laboratories, and/or the fact that PCR-STR DNA techniques were relied upon for identification of deceased soldiers in Operation Desert Storm and victims of the World Trade Center attacks. Furthermore, several opinions indicated that the defense offered no specific testimony or writings to support its motion to exclude PCR-STR DNA evidence. In one case, the defense expert essentially admitted that PCR-STR DNA methodologies were generally accepted. Most decisions rendered after 2000 also considered significant the widespread acceptance of PCR-STR evidence in other jurisdictions. Uncontroverted (or poorly controverted) evidence from independent, nationwide, scientific, and forensic sources, combined with widespread judicial approval, is, not surprisingly, likely to transcend differences in evidentiary admissibility standard.

HGN and CSAAS do not enjoy the same widespread scientific and forensic support as PCR-STR DNA methodologies, and this may be reflected in the split in judicial opinions regarding HGN and CSAAS, both in Frye and Daubert states. Particularly in more controversial fields of study, the possibility exists that ultimate acceptance or exclusion of an evidentiary offering may depend upon the skill and oral acuity of the particular expert witnesses called to testify. With regard

181. Grant, 2002 WL 853627, at *4; Lemour, 802 So.2d at 405-06; Deloatch, 804 A.2d at 610.
183. Grant, 2002 WL 853627, at *1; Rosier, 685 N.E.2d at 743; State v. Jackson, 582 N.W.2d 317, 324-26 (Neb.1998); Deloatch, 804 A.2d at 611.
184. Hill, 107 Cal. Rptr. 2d at 116-17.
185. Id. at 117 (citing other California decisions that had admitted PCR-STR DNA evidence); Grant, 2002 WL 853627, at *6; Lemour, 802 So. 2d at 405; State v. Salmon, 89 S.W.3d 540, 545 (Mo. Ct. App. 2002); Deloatch, 804 A.2d at 613.
to HGN evidence, the same expert, Dr. Marcelline Burns, has testified in hearings or trials in more than half the states. At least in the states included in this Note, her testimony most often preceded a favorable ruling with regard to HGN admissibility, but not always. Kansas and New Mexico courts, which follow Frye and Daubert standards respectively, excluded HGN evidence in spite of her testimony at trial. Thus at least with regard to HGN, courts in both Frye and Daubert states arrived at opposite conclusions after hearing testimony by the same strong proponent.

B. DISTINCTION BETWEEN SCIENTIFIC AND OPINION TESTIMONY

The line between scientific and opinion testimony can be difficult to draw, but the distinction is an important one, since the former must pass the prevailing admissibility test, be it Frye or Daubert, while the latter has no such constraints. When evidence is based on the "hard" sciences, such as DNA testing, the applicability of Frye or Daubert is usually clear. In contrast, a bright line between science and opinion is harder to draw in testimony concerning psychological syndromes or patterns of behavior. Within the criteria of this Note, the courts in one out of three Daubert states and one out of three

186. See, e.g., United States v. Horn, 185 F. Supp. 2d 530, 552-53 (D. Md. 2002) (citing cases in which testimony of Dr. Burns figured prominently in the court's conclusion that HGN tests were admissible); State v. Baue, 607 N.W.2d 191, 201-02 (Neb. 2000) (stating that Dr. Burns had previously testified in approximately 26 jurisdictions); State v. Lasworth, 42 P.3d 844, 847 (N.M. Ct. App. 2001). Dr. Burns is a research psychologist and strong proponent of HGN who has participated in field sobriety tests for the National Highway Traffic Safety Administration. See, e.g., Baue, 607 N.W.2d at 201-02; Lasworth, 42 P.3d at 847.


190. See, e.g., McCord, supra note 29, at 21 n.2, 29-30; supra notes 29, 58 and accompanying text.

191. See, e.g., McCord, supra note 29, at 21 n.2, 29-30; supra notes 29, 31, 58 and accompanying text.
*Frye* states considered CSAAS opinion evidence. While the courts’ attempts to distinguish between opinion and scientific evidence in the field of human behavior can be difficult to decipher, they were not related to *Frye* and *Daubert* inquiries, at least with regard to CSAAS admissibility.

C. JUDICIAL NOTICE

The philosophy of a court toward judicial notice is a factor that may play a role in decisions to admit or exclude evidence, independent of the admissibility standard to which the court adheres. The Minnesota Supreme Court, which follows *Frye*, declined to take judicial notice of PCR-STR DNA methodology as late as 2002, in spite of the fact that virtually all jurisdictions that have confronted this type of evidence have ruled favorably on its admissibility, as have four district courts in Minnesota. In contrast to the conservative approach in Minnesota, another *Frye* state, Maryland, took judicial notice of HGN, a more controversial type of evidence than PCR-STR DNA, in 1995.

Michigan and Florida, which like Maryland adhere to the *Frye* standard, followed Maryland’s lead in taking judicial notice of HGN in 1996 and 1998 respectively. In contrast to these three *Frye* states that took judicial notice of HGN between 1995 and 1998, at least one *Frye* state, New Jersey, and two *Daubert* states, Connecticut and New Mexico, declined to take judicial notice of this technique in 2000, 2002, and 1999, respectively. The New Jersey court believed that the HGN “decisions and studies are by no means unchallenged, for there appears to exist substantial opposing authority.” Similarly,

193. *See supra* text accompanying notes 144-49, 160-65; *see also supra* text accompanying notes 169-76.
196. *Roman Nose*, 640 N.W.2d at 825, 827 (Gilbert, J., dissenting)
the New Mexico court found "no clear guidance from other jurisdictions with regard to . . . their specific treatment of HGN evidence"\textsuperscript{201} and was "not persuaded that HGN testing is 'a subject of common and general knowledge,' or a matter 'well established and authoritatively settled.'"\textsuperscript{202}

These comparisons support at least two observations. First, a court's philosophy toward judicial notice is a factor that may enter into an admissibility decision, independent of\textit{Frye} or\textit{Daubert} criteria. Second, the "flexible" nature of the \textit{Daubert} standard\textsuperscript{203} does not necessarily correlate with a more flexible philosophy of judicial notice of scientific methods.

\section*{D. Interpretation of the \textit{Frye} and \textit{Daubert} Standards}

When applying either the\textit{Frye} or\textit{Daubert} standards, courts have considerable flexibility with regard to the exact nature of the inquiry. The \textit{Frye} standard of "general acceptance in the particular field in which [the scientific principle or discovery] belongs"\textsuperscript{204} is broad, as the court provided no guidance in how to assess acceptance. Similarly, the \textit{Daubert} court's focus on "scientific validity [ ] and thus the evidentiary relevance and reliability" of the scientific principles was not accompanied by a "definitive checklist or test," but only by "some general observations" for judges charged with rendering admissibility decisions\textsuperscript{205}. Thus, perhaps not surprisingly, different courts emphasize different aspects and interpretations of the standards when evaluating admissibility of an offered scientific methodology.

The Connecticut and Massachusetts supreme courts have suggested that, even under the \textit{Daubert} standard that they both follow, the general acceptance inquiry of \textit{Frye} may be considered determinative\textsuperscript{206}. Their philosophy is that, if a scientific technique has achieved general acceptance in the relevant scientific community, no further inquiry under the \textit{Daubert} standard is necessary\textsuperscript{207}.

While other \textit{Daubert} courts may not be so direct about
their espousal of this philosophy, some of them appear to give
great weight to the general acceptance standard of Frye. For
example, the South Dakota Supreme Court, in deciding that
HGN evidence was admissible, listed numerous other
jurisdictions that had "found that use of HGN testing has
gained acceptance in the general scientific community and
satisfies both the Frye and Daubert tests for admission of
scientific evidence." Other than mentioning the general
acceptance of HGN, the South Dakota court did not describe
how this type of evidence fits any of the suggested Daubert
criteria. Similarly, when the South Dakota Supreme Court
admitted CSAAS evidence, it did not provide details of how this
evidence satisfied the suggested Daubert factors.

In contrast to the admission of HGN and CSAAS in South
Dakota, other Daubert states have excluded the same evidence
under Daubert. In excluding HGN, New Mexico claimed that it
needed more biological, physical, or medical evidence
concerning the physiological mechanisms that cause HGN, as
its role was to "conduct a searching, de novo inquiry into the
validity of... HGN... not to merely rubber stamp the
decisions of courts in other jurisdictions that have admitted
such evidence." These comments suggest that the New
Mexico court was seeking an explanation of the physiological
basis of the test, not simply whether it was a reliable indication
of intoxication. The Kentucky Supreme Court, in excluding
CSAAS evidence, found that it was not generally accepted in
the scientific community. The court also found that CSAAS
was not likely to satisfy two other Daubert criteria, first
whether it was subject to testing for refutability and second
whether it had a known error rate. Thus Kentucky, in
excluding CSAAS, was much more specific in its application of
Daubert factors than South Dakota, which admitted the
evidence. These few examples reinforce the observation that
there is a wide range of interpretations and applications of
Daubert in the state courts.

There is a similarly wide diversity in application of Frye's

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211. See supra note 102 and accompanying text.
213. Id. at 695.
general acceptance standard. In State v. Doriguzzi, the New Jersey appellate court declined to admit HGN evidence.215 Since the Doriguzzi court ruled in 2000, it had the benefit of opinions from many other Frye jurisdictions that had previously considered HGN evidence, all using the general acceptance standard.216 The New Jersey court made clear in its Doriguzzi opinion that it gave great weight to opinions excluding HGN written by the Kansas Supreme Court in 1992 and 1998.217 In contrast, the Doriguzzi court gave little attention to opinions from other Frye states (California, Florida, Maryland, Michigan, Minnesota, and Missouri) that had admitted HGN evidence between 1993 and 1998.218 In addition, the Doriguzzi court cited favorably a 1994 Washington appellate court decision that declined to take judicial notice of HGN, but it failed to mention a subsequent Washington Supreme Court opinion that held HGN admissible under Frye.219 Thus, the New Jersey court was highly selective in the Frye opinions that it chose to emphasize. The court explained that

general acceptance within the relevant scientific community consists

216. See id. at 340-41.
217. See id. at 346 (quoting State v. Witte, 836 P.2d 1110, 1121 (Kan. 1992)); id. at 345 (citing State v. Chastain, 960 P.2d 756 (Kan. 1998), for the proposition that HGN has still not achieved sufficient general acceptance to allow the Kansas Supreme Court to take judicial notice of this technique).
218. See id. at 340-45 (citing Schultz v. State, 664 A.2d 60 (Md. 1995), and People v. Berger, 551 N.W.2d 421 (Mich. 1996), in a list of states that have admitted HGN evidence without further comment). The Doriguzzi court cited a 1996 Florida opinion (among others) for the proposition that HGN admission requires a Frye analysis. Id. at 340 (citing State v. Meador, 674 So. 2d 826 (Fla. Dist. Ct. App. 1996)). The Doriguzzi court did not, however, cite a later opinion from the same appellate level Florida court that held that HGN was so well accepted that there was no need to apply Frye. See Williams v. State, 710 So. 2d 24, 32 (Fla. Dist. Ct. App. 1998); supra note 128. The Doriguzzi court did not cite several other opinions favorable to HGN admission: People v. Joehnk, 42 Cal. Rptr. 2d 6, 7 (Cal. Ct. App. 1995); State v. Klawitter, 518 N.W.2d 577, 585 (Minn. 1994); State v. Hill, 865 S.W.2d 702, 704 (Mo. Ct. App. 1993), overruled on other grounds en banc by State v. Carson, 941 S.W.2d 518, 520 (Mo. 1997).
219. See Doriguzzi, 760 A.2d at 345-46 (citing favorably State v. Cissne, 865 P.2d 564, 568-69 (Wash. Ct. App. 1994) for its decision not to take judicial notice of HGN testing). The Doriguzzi court fails to mention State v. Baity, 991 P.2d 1151, 1158-59 (Wash. 2000), which held that HGN is admissible under the Frye standard as evidence of drug intoxication, at least when the test is administered as part of a drug recognition protocol. See supra note 117. The Washington Supreme Court opinion was filed on February 3, 2000, seven months before the Doriguzzi case was argued.
of more than just counting up how many cases go in a certain direction. General acceptance is not an end in itself. It is the test used to ascertain whether a sufficient level of reliability has been achieved.\(^2\)

This explanation does not clarify why the opinions excluding HGN evidence were more compelling to the New Jersey court than those admitting it, unless the court was looking for near unanimity in endorsement of the test. Other courts have explained that, while the *Frye* standard requires general acceptance, it does not mandate universal acceptance.\(^2\) Thus, different *Frye* courts have different interpretations of the general acceptance standard that they follow. Given the wide interpretations possible for both *Frye* and *Daubert* standards, the observation in this Note that there is no correlation between admissibility and adherence to one or the other standard should not be surprising.\(^2\)

**CONCLUSION**

The *Daubert* standard, promulgated nearly a decade ago, envisioned a more flexible approach to admissibility of scientific evidence, consistent with the Federal Rules of Evidence. This Note has examined the results of admissibility challenges for three scientific methodologies in *Frye* and *Daubert* states to ascertain whether there is a practical difference in the way that jurisdictions adhering to the two standards rule on scientific evidence. Although states vary widely in how they treat certain types of scientific evidence, this variation does not correlate with the adherence to *Frye* or *Daubert* admissibility standards. The inherent (and perhaps unavoidable) breadth of the inquiries compatible with either standard permits widely variable opinions concerning admissibility of a single scientific methodology. The striking differences among states with respect to admissibility of scientific evidence are not likely to be lessened by uniform adoption of either the *Frye* or *Daubert* standard.

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222. *See supra* Table 1.