

NOT FOR PUBLICATION WITHOUT THE  
APPROVAL OF THE APPELLATE DIVISION

SUPERIOR COURT OF NEW JERSEY  
APPELLATE DIVISION  
A-4787-98T5

STATE OF NEW JERSEY,  
  
Plaintiff-Respondent,  
  
v.  
  
ROBERT DORIGUZZI,  
  
Defendant-Appellant.

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Argued September 12, 2000 -- Decided October  
20, 2000

Before Judges Pressler, Ciancia and Alley.

On appeal from the Superior Court of New  
Jersey, Law Division, Bergen County.

Gerald R. Salerno argued the cause for  
appellant (Aronsohn Weiner, attorneys; Mr.  
Salerno, on the brief).

Sean Carpenter, Assistant Prosecutor, argued  
the cause for respondent (William H.  
Schmidt, Bergen County Prosecutor, attorney;  
Mr. Carpenter of counsel and on the brief).

The opinion of the court was delivered by  
  
CIANCIA, J.A.D.

Defendant Robert Doriguzzi was found guilty of driving under  
the influence of alcohol, N.J.S.A. 39:4-50. The evidence

against him consisted of observations by police officers at the location where defendant's vehicle was stopped and later at the police station. Those observations were based in large part on defendant's responses to field sobriety tests (FST) and a horizontal gaze nystagmus test (HGN). A breathalyzer test was administered but the results were not offered into evidence because the machine was damaged after defendant used it and, therefore, no "after test" of the machine's accuracy could be made. In finding defendant guilty, both the municipal court judge and the Law Division judge relied upon the totality of the evidence, including defendant's alleged failure of the HGN test.

The controlling appellate issue is whether the trial courts properly accepted evidence of the HGN test without foundation testimony establishing its general acceptance in the scientific community. The issue is presented because neither this court nor our Supreme Court has yet endorsed HGN testing. A published trial court opinion, decided subsequent to the Law Division's determination in the present case, has held that HGN testing is generally accepted in the relevant scientific community. State v. Maida, 332 N.J. Super. 564 (Law Div. 2000). However, absent a similar determination by this court or our Supreme Court, the trial courts in this State are not at liberty to admit evidence

of newly-devised scientific technology unless the general acceptance thereof is demonstrated by expert testimony, authoritative scientific and legal writings or judicial opinions. See generally State v. Harvey, 151 N.J. 117, 166-176 (1997). Here, none of these foundational options were present or discussed in the trial courts. Accordingly, we must decide whether this court should take judicial notice of the general acceptance of HGN testing in the scientific community based upon our independent review of authoritative, scientific and legal writings and those judicial opinions from other jurisdictions that have accepted HGN testing. For the reasons we now set forth, we decline to do so.

The underlying facts are as follows. On May 16, 1998, shortly before 1:00 a.m., defendant was driving his vehicle in an erratic manner and was pulled over by Officer Schroeder of the Park Ridge Police Department. Defendant was unable to produce a driver's license and the officer observed that defendant's eyes were "watery and bloodshot." There was a passenger in the vehicle with defendant and an odor of alcohol emanated from the car. In response to the officer's inquiry, defendant admitted having a couple of beers. Defendant was later to admit drinking a beer every half-hour from 7:00 p.m. to midnight at a social function.

A second patrolman, Officer DiBlasi, arrived on the scene and defendant was asked to exit the vehicle so that certain sobriety tests could be performed. Three tests were administered in all. The first was the HGN test administered by Officer Schroeder. It is undisputed that nystagmus is defined as the involuntary jerking of the eye. Schroeder did not testify to the theory behind the test in so many words, but it is generally understood that alcohol use, among other things, will cause nystagmus. Schroeder had been trained to administer the test and was certified in that regard. His training is not seriously questioned on this appeal. Schroeder explained that he first asked defendant if defendant was wearing hard contact lenses or was under a doctor's supervision. Defendant responded in the negative and Schroeder then began the HGN testing. He held his finger about twelve to fifteen inches in front of defendant's eyes and moved his finger side-to-side. Defendant was asked to follow the finger with his eyes without moving his head and he complied. Schroeder described the process:

The first thing I would test would be the left eye for a lack of smooth pursuit. I then tested the right eye for lack of smooth pursuit. I observed the Defendant to have a lack [of] smooth pursuit in both eyes. The second part of the test was to test for nystagmus at maximum deviation. I tested the left eye first and then the right eye and I did observe nystagmus at maximum deviation in both eyes.

The third part is nystagmus prior to 45 degrees. I did not observe nystagmus prior to 45 degrees in either eye. I then concluded that he failed the test because I have observed four points on the horizontal gaze nystagmus test.

Based on this test, the officer concluded defendant was under the influence of alcohol.

The second test was a "walk and turn" test, which defendant did not properly perform because he lost his balance and at least once did not "touch heel to toe." The third and last test was the "one-legged stand," which, among other things, requires that the subject keep his arms at his side. In attempting to perform the test, defendant lifted his arms, swayed while trying to balance and put his foot down three times when it was supposed to remain elevated. In Schroeder's opinion defendant was under the influence of alcohol.

Officer DiBlasi's testimony was generally corroborative of Schroeder's. DiBlasi had also been trained and certified in HGN testing. He was able to view defendant's eyes as Schroeder administered the HGN test.

Additional sobriety coordination tests were administered at the police station and defendant's performance was imperfect in a number of ways, although he apparently did somewhat better at that time than he had at the scene of his arrest. For present purposes we need not detail those tests and defendant's efforts

to complete them successfully.

At the conclusion of the municipal court testimony, defendant's attorney again objected to admission of the HGN tests because there had been no foundation concerning "what the test is, what's it based upon and what its scientific reliability is, what the principles behind it are . . . ." In rendering his decision, the municipal court judge did not directly respond to defense counsel's concerns, but he said:

He [Schroeder] also performed the -- he also performed the HGN test. Nystagmus means an involuntary jerking of the eyes. Although, nystagmus refers to the involuntary jerking that occurs, that the eye (indiscernible) towards the side. In addition to being involuntary, a person [who] experiences nystagmus ordinarily is unaware of the jerking [that] is happening. (indiscernible) is powerless and cannot be controlled. Albeit not judicially established, the HGN test is the most accurate of all tests. I would expect that at sometime [sic] in the near future, our courts will render opinions setting forth the -- their view of the HGN test. This is not a court that has the authority to -- right in establishing that. However, it is one of the factors that are included. The case is not decided on one part.

Based upon the "totality of the circumstances," defendant was found guilty of driving under the influence of alcohol.

At the conclusion of the de novo appeal on the record in the Law Division, the judge again relied upon the totality of the incriminating evidence to find defendant guilty. As to the HGN

test, the Law Division judge said:

While there is no written opinion regarding the scientific reliability of the test we know that the courts utilize that testimony on a regular basis. Officers -- and we had two officers testify here, that they were trained in administering those tests. In fact both were able to observe the eye movement of the defendant and each come to a conclusion as to whether or not the defendant failed or passed the test.

He went on to indicate his belief that the HGN test was a simple test not really any different from the other coordination tests that were administered. The implication of that statement brings us to the initial problem we must address on appeal.

The State contends that the HGN test is not a scientific test at all but simply an observation made by the officer akin to what is observed when coordination tests are administered. We disagree. Because the record here is virtually devoid of all background information on HGN testing, we have surveyed opinions from other jurisdictions and read a selected number of articles in an effort to garner the necessary information. Most of the relevant decisions are collected in John P. Ludington, Annotation, Horizontal Gaze Nystagmus Test: Use in Impaired Driving Prosecution, 60 A.L.R.4th 1129 (1988).

The vast majority of states that have considered the question have found HGN testing to be scientific. A minority view is that the test is not sufficiently scientific to require

expert evidence establishing its acceptance in the scientific community. The test itself has been described similarly by many courts. In a thoughtful and detailed opinion, the intermediate appellate court in Hawaii explained HGN testing as follows:

The HGN test is based on the observation of three different physical manifestations which occur when a person is under the influence of alcohol: (1) the inability of a person to follow, visually, in a smooth way, an object that is moved laterally in front of the person's eyes; (2) the inability to retain focus and the likelihood of jerking of the eyeball when a person has moved his or her eye to the extreme range of peripheral vision; and (3) the reported observation that this "jerking" of the eyeball begins before the eye has moved 45 degrees from forward gaze if the individual's BAC [(Blood Alcohol Content)] is .10 [percent] or higher.

Scientific Evidence in Civil and  
Criminal Cases § 3.10, at 206  
(footnote omitted).

The only equipment needed to administer the HGN test is a stimulus, such as a pen, penlight, or the officer's finger. The stimulus is positioned about twelve to fifteen inches in front of a suspect's eyes. 1984 NHTSA<sup>[1]</sup> Instruction Manual, reprinted in 1 Defense of Drunk Driving § 10.99[2], app. at 10-93. As the officer gradually moves the stimulus towards the suspect's ear and out of the suspect's field of vision, the officer observes the suspect's eyeballs to detect three signs of intoxication: an angle

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<sup>1</sup> NHTSA stands for the National Highway Traffic Safety Administration. It is and has been the most aggressive proponent of HGN testing.



of onset of nystagmus (measured from the suspect's nose) of forty-five degrees or less; distinct or pronounced nystagmus at the eye's maximum horizontal deviation; and the inability of the eyes to smoothly pursue the stimulus. Note, Horizontal Gaze Nystagmus: A Closer Look, 36 Jurimetrics Journal 383, 384 (1996) (Note, 36 Jurimetrics Journal). The officer scores one point for each sign of intoxication per eye, the maximum score being six points. A person who takes the HGN test and receives a score of four or more points is classified as having a BAC of over 0.10 percent. Id.

[Hawai'i v. Ito, 978 P.2d 191, 197-198 (Haw. Ct. App. 1999) (footnote omitted).]

The Hawaii Court of Appeals then went on to catalog the opinions that have decided whether HGN testing is scientific:

A minority of jurisdictions have held that HGN testing is based on a police officer's personal observations of a driver's physical characteristics and is not scientific in nature. These jurisdictions view HGN tests as no different from other FSTs, such as the walk-and-turn or the one-leg-stand, and admit HGN test results into evidence without scientific foundation or expert interpretation. See, e.g., City of Fargo v. McLaughlin, 512 N.W.2d 700 (N.D. 1984); State v. Bresson, 51 Ohio St. 3d 123, 554 N.E.2d 1330 (1990); State v. Sullivan, 310 S.C. 311, 426 S.E.2d 766 (1993); Finley v. State, 809 S.W.2d 909 (Tex. App. 1991); Salt Lake City v. Garcia, 912 P.2d 997 (Utah App. 1996), cert. denied, 919 P.2d 1208 (Utah 1996).

A second group of courts have concluded that unlike the walk-and-turn and the one-leg-stand FST's, which are grounded in common knowledge that excessive alcohol can cause coordination, balance, and mental agility

problems, HGN testing is based on a scientific principle not generally known by lay jurors. Due to this scientific nature, HGN test results are not admitted by these courts unless expert testimony meeting the criteria set forth in Frye v. United States, 293 F. 1013 (D.C. Cir. 1923); Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993); or a pertinent state rule of evidence is adduced to demonstrate the reliability and acceptability of the test. See, e.g., Ex parte Malone v. City of Silverhill, 575 So. 2d 106 (Ala. 1990); People v. Leahy, 8 Cal. 4th 587, 34 Cal. Rptr. 2d 663, 882 P.2d 321 (1994); State v. Merritt, 36 Conn. App. 76, 647 A.2d 1021 (1994); State v. Meador, 674 So. 2d 826 (Fla. Dist. Ct. App. 1996), review denied, 686 So. 2d 580 (Fla. 1996); State v. Witte, 251 Kan. 313, 836 P.2d 1110 (1992); Commonwealth v. Sands, 424 Mass. 184, 675 N.E.2d 370 (1997); State v. Wheeler, 764 S.W.2d 523 (Mo. Ct. App. 1989); State v. Borchardt, 224 Neb. 47, 395 N.W.2d 551 (1986); State v. Torres, 127 N.M. 20, 976 P.2d 20 (1999); People v. Heidelberg, 214 A.D.2d 767, 624 N.Y.S.2d 656 (N.Y. App. Div. 1995), appeal denied, 85 N.Y.2d 973, 629 N.Y.S.2d 733, 653 N.E.2d 629 (1995); State v. Helms, 345 N.C. 578, 504 S.E.2d 293 (1998); Yell v. State, 856 P.2d 996 (Okla. Crim. App. 1993); State v. O'Key, 321 Or. 285, 899 P.2d 663 (1995); Commonwealth v. Moore, 430 Pa. Super. 575, 635 A.2d 625 (1993), appeal denied, 540 Pa. 612, 656 A.2d 118 (1995); State v. Murphy, 953 S.W.2d 200 (Ten. 1997); State v. Cissne, 72 Wash. App. 677, 865 P.2d 564 (1994), review denied, 124 Wash. 2d 1006, 877 P.2d 1288 (1994); State v. Barker, 179 W. Va. 194, 366 S.E.2d 642 (1988), overruled on other grounds by Wilt v. Buracker, 191 W. Va. 39, 443 S.E.2d 196 (1993) (adopting the Daubert standard over the Frye standard). "In effect, these cases require HGN test results to be

scientifically validated in each individual case, or at least recognized as scientifically valid once by an appellate court within the jurisdiction." City of Fargo v. McLaughlin, 512 N.W.2d at 706.

A third group of courts, while agreeing that HGN testing is scientific in nature, have determined, based on a review of relevant case law and scientific publications, that the HGN test is a reliable and accepted indicator of intoxication and, therefore, HGN test results are admissible without further expert testimony as to the scientific validity and reliability of HGN testing, as long as proper foundation as to the techniques used and the police officer's training, experience, and ability to administer the test has been laid. See, e.g., Ballard v. State, 955 P.2d 931 (Alaska Ct. App. 1998), overruled on other grounds by State v. Coon, 974 P.2d 386 (Alaska 1999) (adopting the Daubert standard over the Frye standard); State ex rel. Hamilton v. City Court, 165 Ariz. 514, 799 P.2d 855 (1990); Zimmerman v. State, 693 A.2d 311 (Del. 1997); Hawkins v. State, 223 Ga. App. 34, 476 S.E.2d 803 (1996); People v. Buening, 229 Ill. App. 3d 538, 170 Ill. Dec. 542, 592 N.E.2d 1222 (1992), appeal denied, 146 Ill.2d 634, 176 Ill. Dec. 806, 602 N.E.2d 460 (1992); State v. Murphy, 451 N.W.2d 154 (Iowa 1990); State v. Armstrong, 561 So. 2d 883 (La. Ct. App. 1990), writ denied, 568 So. 2d 1077 (La. 1990); State v. Taylor, 694 A.2d 907 (Me. 1997); Schultz v. State, 106 Md. App. 145, 664 A.2d 60 (1995); People v. Berger, 217 Mich. App. 213, 551 N.W.2d 421 (1996); State v. Clark, 234 Mont. 222, 762 P.2d 853 (1988); Emerson v. State, 880 S.W.2d 759 (Tex. Crim. App. 1994), cert. denied, 513 U.S. 931, 115 S. Ct. 323, 130 L. Ed. 2d 284 (1994). These courts have either taken judicial notice of the validity and reliability of the HGN test or concluded that HGN test results are admissible as

scientific evidence as a matter of law.

[Id. at 199-200 (footnotes omitted).]

We are satisfied that the majority view on this question is the view to be adopted in New Jersey. In this jurisdiction a subject matter that is so esoteric that it is beyond the ken of the average person typically qualifies as an appropriate subject for expert testimony. State v. Kelly, 97 N.J. 178, 209 (1984); N.J.R.E. 702. A factfinder should not be allowed to speculate without the assistance of expert testimony in an area where the average person could not be expected to have sufficient knowledge or experience. Kelly v. Berlin, 300 N.J. Super. 256, 268 (App. Div. 1997). Here, nystagmus is a scientific term probably not familiar to most persons. The relationship of nystagmus to the consumption of alcohol or drugs is a scientific principle. The manifestation under different circumstances is also a scientific theory that would not be known by the average person. Accordingly, we find HGN testing to be scientific.

A novel scientific test not previously approved by this court or our Supreme Court, in order to achieve admission into evidence, must meet the test articulated in Frye v. United States, 293 F. 1013 (D.C. Cir. 1923). Although Frye has been replaced in the federal court system in favor of the more lenient standards of Federal Rule of Evidence 702 as set forth

in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993), in New Jersey, with the exception of toxic tort litigation, Frye remains the standard. Harvey, supra, 151 N.J. at 169-170. The Frye test asks whether the scientific test is generally accepted in the relevant scientific community. That acceptance may be demonstrated as follows:

A proponent of a newly-devised scientific technology can prove its general acceptance in three ways:

(1) by expert testimony as to the general acceptance, among those in the profession, of the premises on which the proffered expert witness based his or her analysis;

(2) by authoritative scientific and legal writings indicating that the scientific community accepts the premises underlying the proffered testimony; and

(3) by judicial opinions that indicate the expert's premises have gained general acceptance.

The burden to "clearly establish" each of these methods is on the proponent.

[Harvey, supra, at 170 (citations omitted).]

As indicated, in the present case no foundation evidence of any sort, beyond the qualifications of Officer Schroeder to administer the test, was presented in the trial courts. This court has the discretion to survey relevant decisions from other

jurisdictions as well as pertinent, scientific and legal writings. If we are persuaded to the general acceptance of the test within the scientific community, we can approve the test's admissibility for future trials. Harvey, supra, 151 N.J. at 167-168; State v. Cavallo, 88 N.J. 508, 521 (1982). It is, nevertheless, unusual for an appellate court to rely exclusively on judicial notice. See Ferlise v. Eiler, 202 N.J. Super. 330, 335 (App. Div. 1985) (court unwilling to take judicial notice that thermography enjoyed general acceptance in the medical community absent appropriate record in the trial court). In the present case, a survey of the relevant decisions around the country does not provide us with the level of certainty necessary to approve HGN testing for future cases. We also note that our ability to comprehend the technical writings in this field or the interpretations of them by other scientists is hampered by the very problem that causes our inquiry -- i.e., we are not scientists with technical backgrounds. While it may very well be that HGN testing can meet the Frye test, we believe that the case which decides the issue for all other cases in New Jersey should be grounded in sufficient expert testimony to assure defendants and the State alike that a conviction for driving under the influence, when based in part on HGN testing, is a conviction grounded in reliable scientific data. The

consequences of a drunk driving conviction are severe and may include incarceration. Compare State v. Cary, 99 N.J. Super. 323, 333 (Law Div. 1968), aff'd after remand, 56 N.J. 16 (1970) (high degree or reliability needed to admit scientific evidence where the freedom or even the life of an individual is at stake). Our additional reasons for this conservative approach are as follows.

The clear majority of jurisdictions that have considered HGN testing allow its admission into evidence for one or more purposes. Some of those cases have less significance to our present inquiry because they view HGN testing as non-scientific, or they apply evidential tests different from and more generous than the Frye test, or they admit HGN testing only for the limited purpose of establishing probable cause to arrest or perhaps only to corroborate chemical sobriety tests.

The seminal case in favor of admitting HGN test results is State v. Superior Court of the County of Cochise, 718 P.2d 171 (Ariz. 1986). That opinion has been relied upon by every jurisdiction that has accepted HGN testing as meeting the Frye test. We are influenced though by some of the criticism that has subsequently developed of the Arizona decision. Thus, six years

after Superior Court,<sup>2</sup> the Kansas Supreme Court issued what has become the leading opinion against admitting HGN testing without a proper record established in the trial court. We find it appropriate to quote it at length:

Our research indicates that the reaction within the scientific community is mixed. Some articles endorse the HGN testing and its accuracy. See, e.g., Good & Augsburger, Use of Horizontal Gaze Nystagmus as a Part of Roadside Sobriety Testing, 63 Am. J. of Optometry & Physiological Optics, 467 (1986). Other articles discuss concerns with the HGN test. See, e.g., Carper & McCamey, 77 Ill. B.J. at 149; Halperin & Yolton, Is the Driver Drunk? Ocularmotor Sobriety Testing, 57 J. of the Am. Optometric A., 654, 657 (1986). Several commentators disagree with the Arizona Supreme Court's conclusions, insisting the HGN test has not been accepted generally within the scientific community and questioning the methodology of the NHTSA's research. See, e.g., Cowan & Jaffee, Proof and Disproof of Alcohol-Induced Driving Impairment Through Evidence of Observable Intoxication and Coordination Testing, 9 Am. Jur. Proof of Facts 3d 459 § 12 (1990); Pangman, Horizontal Gaze Nystagmus: Voodoo Science, 2 DWI Journal 1, 3-4 (1987); Rouleau, Unreliability of the Horizontal Gaze Nystagmus Test, 4 Am. Jur. Proof of Facts 3d 439 § 7, p. 452 (1989); 1 Erwin, Defense of Drunk Driving Cases, §§ 8A:06, 8A:08 (3d ed. 1992); 2 Nichols, Drinking/Driving Litigation, § 26.01 (1991 &

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<sup>2</sup> Abbreviated reference to the Arizona case in other decisions is sometimes "Superior Court" and sometimes "Blake." The full caption of the case is State of Arizona v. Superior Court of the State of Arizona in and for the County of Cochise and the Hon. James L. Riley, Division III and Frederick Andrew Blake.



1992 Supp.)). These articles or the particular sections cited are not listed in the Arizona opinion's appendices. Most of these articles were published after the Arizona opinion was issued April 7, 1986.

The defendant contends the scientific community does not agree about the correlation between the BAC level and the angle of onset at which nystagmus occurs. The NHTSA declares that "the extent of impairment is indicated by the angle at which nystagmus begins." Officers are instructed to have the suspect move his or her eye sideways to an angle of 45 degrees from the nose and to watch whether nystagmus occurs before the eye reaches the 45-degree angle. 1984 NHTSA Study at 3-4. "The expected angle of onset for the BAC of 0.10% is 40.2 degrees for the right eye and 40.1 degrees for the left eye." 1981 NHTSA Study at 25. The NHTSA maintains that, if nystagmus is observed at the 45-degree angle, a BAC of .10 can be estimated correctly 78 percent of the time. 1981 NHTSA Study at 25-30. Put another way, 22 percent of the time it is wrong.

Other researchers disagree that 45 degrees is the appropriate angle of onset. According to one authority, 50-60 percent of sober individuals who deviate their eyes more than 40 degrees to the side will exhibit nystagmus, and this nystagmus cannot be distinguished from alcohol gaze nystagmus. Pangman, 2 DWI Journal at 2 (citing Toglia, Electronystagmography: Technical Aspects and Atlas [1976]). Another researcher suggests the threshold appearance of HGN in most individuals is observed at a 40-degree angle with a BAC reading of .06 percent. Pangman, 2 DWI Journal at 2 (citing Aschan, Different Types of Alcohol Nystagmus, Acta Oto-Laryngologica Supp. 140:69 [1957]; Aschan, Bergstedt, Goldberg & Laurell, Positional Nystagmus in

Man During and After Alcohol Intoxication, 17 Q.J. of Studies on Alcohol 381 [1956]). Still another researcher contends individuals with a BAC reading of .10 do not exhibit nystagmus until the eye is deviated to a 51-degree angle. Pangman, 2 DWI Journal at 2 (citing Lehti, The Effect of Blood Alcohol Concentration on the Onset of Gaze Nystagmus, 13 Blutalkohol 411 [1976]). See Rouleau, 4 Am. Jur. Proof of Facts 3d 439 §§ 7, 8; 2 Nichols, Drinking/Driving Litigation § 26:01.

Researchers have expressed concern that the 45-degree angle used by the NHTSA will create false positive readings. The NHTSA Study also has been criticized for "deliberately screen[ing] out people at high risk for being classified as false positives." 2 Nichols, Drinking/Driving Litigation § 26:01, p. 2.

The NHTSA agrees the angle of lateral deviation is critical. Despite the fact that the NHTSA obtained its research results through the use of mechanical devices that "hold the head in a stable position and precisely measure the angle of lateral deviation of the eye," the NHTSA instructs officers to estimate the 45-degree angle. A visual estimation of the angle would seem to cause inaccurate and inconsistent results. 2 Nichols, Drinking/Driving Litigation § 26:01, p. 4. The stability of the suspect's head, another critical factor, is also questionable when the test is conducted at roadside. Pangman, 2 DWI Journal at 3.

In addition to intoxication, many other factors can cause nystagmus.

"Nystagmus can be caused by problems in an individual's inner ear labyrinth. In fact, irrigating the ears with warm or cold water, not a far-fetched scenario under particular weather

conditions, is a source of error. Physiological problems such as certain kinds of diseases may also result in gaze nystagmus. Influenza, streptococcus infections, vertigo, measles, syphilis, arteriosclerosis, muscular dystrophy, multiple sclerosis, Korsakoff's Syndrome, brain hemorrhage, epilepsy, and other psychogenic disorders all have been shown to cause nystagmus. Furthermore, conditions such as hypertension, motion sickness, sunstroke, eyestrain, eye muscle fatigue, glaucoma, and changes in atmospheric pressure may result in gaze nystagmus. The consumption of common substances such as caffeine, nicotine, or aspirin also lead to nystagmus almost identical to that caused by alcohol consumption." Pangman, 2 DWI Journal at 3.

See Rouleau, 4 Am. Jur. Proof of Facts 3d 439 § 9. Temporary nystagmus can occur when lighting conditions are poor. Rouleau, 4 Am. Jur. Proof of Facts 3d 439 § 9, p. 456.

An individual's circadian rhythms (biorhythms) can affect nystagmus readings - the body reacts differently to alcohol at different times of the day. One researcher has suggested that because of this, the angle of onset should be decreased five degrees between midnight and 5 a.m. Rouleau, 4 Am. Jur. Proof of Facts 3d 439 § 9, p. 456; Pangman, 2 DWI Journal at 3. A number of driving under the influence arrests occur after midnight, which "would seem to indicate that sensitivity of HGN to alcohol is enhanced during the hours of the day when the greatest number of drunk driving arrests occur." Pangman, 2 DWI Journal at 3.

A prosecution-oriented group in California conducted its own research:

"The study measured the correlation of police officer estimations of the angle of onset of nystagmus against chemical tests involving breath and blood samples. The data in the study revealed that there was virtually no correlation between the actual value of blood alcohol concentration and the predicted value based upon the angle of onset of nystagmus. However, a correlation did develop between the breath alcohol reading and the level predicted by the alcohol gaze nystagmus. Interestingly, the study concluded that this was caused by the very subjective nature of the test itself:

Since the police officers are the ones operating the breath testing equipment, it appears that, at least in some of the cases, an already known breath alcohol value may have influenced the determination of the angle of onset.

"Simply put, the cops fudged the horizontal gaze nystagmus determination to correspond with the already known correct answer determined by the breath test result. However, since they did not know what the correct answer was when the blood sample was tested (since someone else did the analysis), they could not come close to the correct BAC. These were highly trained California police officers, experienced and familiar with the test procedures and aware that their results were being scrutinized for accuracy and cross-checked against actual BAC determinations. This study points out the fact that horizontal gaze nystagmus tests should never be intended as a substitute for actual blood or breath alcohol testing. The purpose of the

procedure, if any is strictly a field screening function, like other presumptive tests." Pangman, 2 DWI Journal at 3.

The group conceded "the use of '(HGN) to predict a person's blood alcohol level does not appear to be warranted.'" Rouleau, 4 Am. Jur. Proof of Facts 3d 439 § 8.

If the Arizona Supreme Court had had this evidence before it, it may not have held that HGN evidence satisfies the Frye admissibility requirements. The reliability of the HGN test is not currently a settled proposition in the scientific community. This court holds that HGN evidence requires a Frye foundation for admissibility. If the Frye foundation is established to this court's satisfaction, HGN evidence will be admitted in other cases without the need to satisfy the Frye test each time. Before this court rules on whether HGN evidence satisfies the Frye admissibility requirements, a trial court first should have 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.

[State v. Witte, 836 P.2d 1110, 1119-1121 (Kan. 1992).]

It appears that the Witte decision remains good law in Kansas. Kansas v. Canaan, 964 P.2d 681 (Kan. 1998). HGN testing has not yet achieved general acceptance within the relevant scientific community, at least not in such a manner that would allow the Kansas Supreme Court to take judicial notice. Kansas v. Chastain, 960 P.2d 756 (Kan. 1998).

The California Supreme Court also has declined to take judicial notice of various decisions and published studies that have concluded HGN testing meets the Frye test. In People v. Leahy, 882 P.2d 321 (Cal. 1994), the California Court stated:

The People urge, however, that we take judicial notice of the various decisions and published studies concluding that HGN testing meets the Frye standard. But the conclusions of those decisions and studies are by no means unchallenged, for there appears to exist substantial opposing authority. Cissne,<sup>[3]</sup> supra, 865 P.2d at p. 568.

Witte, decided in 1992, suggests that if the Arizona Supreme Court in Blake had been aware of the contrary authority and evidence, it might not have held that HGN testing satisfied Frye. (836 P.2d at p. 1121.) The 1994 Cissne decision likewise observed that "[a]s Witte noted, research and articles critical of HGN testing appeared after some jurisdictions concluded that HGN testing satisfied Frye standard[s]." (865 P.2d at p. 568.) Cissne concluded, "[w]e decline the State's invitation to follow those few jurisdictions that have concluded that HGN testing meets the Frye standard. The trial court must evaluate, weigh and consider the conflicting evidence before determining whether the test is novel, and, if it is novel, whether it is reliable . . . ." (Id. at p. 569.)

Additionally, we note that several decisions from other states have refused to resolve the Frye issue on appeal by reference to scientific studies and articles

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<sup>3</sup> State v. Cissne, 865 P.2d 564 (Wash. Ct. App.), review denied, 877 P.2d 1288 (Wash. 1994).

not introduced at the defendant's trial. Although theoretically we could attempt to weigh and evaluate the merits of the conflicting authority, it seems more appropriate to remand this issue to a trial court for an evidentiary hearing, as several other decisions have suggested.

As stated in Witte, "The reliability of the HGN test is not currently a settled proposition in the scientific community. . . . Before this court rules on whether HGN evidence satisfies the Frye admissibility requirements, a trial court first should have 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." (836 P.2d at p. 1121.) We agree with that analysis and, accordingly, we deny the People's application for judicial notice.

[Id. at 334-335 (citations omitted).]

The Illinois case law is also of interest. Many of the decisions around the country cite People v. Buening, 592 N.E.2d 1222 (Ill. App. Ct.), appeal denied, 602 N.E.2d 460 (Ill. 1992), as authority for accepting HGN test evidence because other jurisdictions have found it generally accepted in the scientific community. Buening was decided in the Fifth District of Illinois. In 1997 an intermediate appellate court in the Fourth District declined to follow Buening. People v. Kirk, 681 N.E.2d 1073, (Ill. App. Ct.), appeal denied, 686 N.E.2d 1168 (Ill. 1997). The Kirk decision noted that the Buening opinion relied heavily on the seminal case from Arizona, which Kirk referred to

as the Blake decision, as well as other decisions around the country that in turn had relied on Blake. The Kirk court stated:

Reliance upon other courts' opinions can be problematic: "Unless the question of general acceptance has been thoroughly and thoughtfully litigated in the previous cases, . . . reliance on judicial practice is a hollow ritual." McCormick § 203, at 870 n. 20. For example, McCormick cites Glover v. State, 787 S.W.2d 544 (Tex. App. 1990), as a case where the court held that DNA fingerprinting enjoys general acceptance following a hearing in which defendant produced no expert testimony. In reaching its decision, the Glover court relied upon other cases in which no defense experts were available. McCormick § 203, at 870 n. 20. "[J]udicial notice could become a yellow brick road for judicial acceptance of bogus or at least unvalidated scientific theories or techniques." McCormick § 203, at 870 n. 20, quoting J. Starrs, Frye v. United States Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702, 115 F.R.D. 92, 97 (1987). The State's evidence in Blake consisted of four witnesses: one research psychologist and three police officers. The defendant did not present any evidence. The Blake court relied upon its own research of relevant articles. While the Blake defendant "won" the Frye hearing at the trial court level, that decision was reversed by the appellate court. Blake is questionable authority for the proposition that the HGN test meets the Frye standard in Illinois courts.

The expert retained by the prosecution in Blake, Dr. Burns, was the individual who conducted the study that led to the NHTSA's adoption of the HGN test. Police departments, in turn, have adopted the



NHTSA's recommendations. In Blake, Dr. Burns supported the proposition that the HGN test is accepted and reliable, in part, by relying upon the NHTSA's manual and the fact that the test is used by different police departments. By doing so, however, she in essence referred back to her own conclusions, magnifying the opportunity for error. We do not say that Dr. Burns' conclusions on the subject are flawed, only that the issue has not been fully and thoroughly litigated. The proper place for this litigation is in the trial court, and it was error to admit the HGN test evidence without a proper Frye hearing.

[Id. at 1078.]

In 1999 the Appellate Court of Illinois, sitting in the Fifth District, again had the opportunity to revisit the HGN question. It chose to follow Kirk rather than Buening. People v. Basler, 710 N.E.2d 431 (Ill. App. Ct.), appeal granted, 720 N.E.2d 1096 (Ill. 1999). ("We agree with Kirk that relying on other courts' opinions to conclude that the HGN test meets the Frye standard may cause problems." Id. at 434). Although the Illinois Supreme Court granted the appeal in Basler, as of this writing it has not issued an opinion.

We have set forth these decisions from other jurisdictions at some length, not to demonstrate the unreliability of HGN testing, but only to explain our reluctance to endorse it based upon a survey of other judicial opinions. General acceptance within the relevant scientific community consists 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 to allow consideration of the scientific test by the factfinder. See State v. Marcus, 294 N.J. Super. 267, 274-275 (App. Div. 1996), certif. denied, 157 N.J. 543 (1998); State v. Williams, 252 N.J. Super. 369, 374-376 (Law Div. 1991). We emphasize that what is being sought here by the State is admission of HGN testing as an element of proof to permit the factfinder to conclude that failure of the HGN test, in combination with the failure of coordination tests, sufficiently proves defendant's guilt of driving under the influence of alcohol. This is qualitatively different from use of the HGN test only to establish probable cause to arrest or only in conjunction with breathalyzer results.

We recognize that if the HGN test results had been introduced into evidence without the support of a scientific-reliability foundation merely to corroborate a breathalyzer reading of .10 or higher, the admission of that evidence would likely have been harmless error because of its lack of capacity to have affected the outcome of the trial. Since such a reading resulting from a properly administered breathalyzer test performed on a properly certified breathalyzer machine is

virtually conclusive, the harmless-error conclusion is apparently unavoidable. Here, however, there were no breathalyzer test results admitted into evidence and the HGN test results were an integral part of the decisions finding defendant guilty. We note a recurrent theme in the decisions from other jurisdictions that a jury may be inappropriately influenced by the apparent scientific precision of HGN testing or otherwise fail to properly understand it. In New Jersey juries do not sit on DUI cases, but in this instance the municipal court judge characterized the HGN test as "the most accurate of all tests" and the Law Division judge questioned whether HGN tests were "really any different" than coordination tests. Accordingly, a determination of harmless error is not available to us in the present matter.

Defendant's conviction is reversed and the matter is remanded to the Law Division for a trial de novo on the record without consideration of the HGN tests.