# APA Amicus Brief Submitted to Alaska Court of Appeals

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The American Polygraph Association has, on several occasions, weighed in on cases of importance to polygraph through filing amicus briefs. Such briefing has included, but not been limited to, amicus filings in *United States v. Scheffer*, 523 U.S. 303 (1998)(the only us Supreme Court case considering admissibility of polygraph) and *Lee v Martinez*, 96 P.3d 291 (N.M. 2004)(which considered the continuing viability of New Mexico's rules of evidence permitting admissibility of polygraph results). The most recent amicus briefing filed on behalf of the APA is in the Alaska case of *Alaska v. Alexander*, A-11423/11433.

Alaska v. Alexander arises after prior direction from the Alaska Court of Appeals that a hearing be held to determine whether to admit polygraph evidence favorable to the defendant Alexander. Because of similarity of witnesses and issues, the hearing was a joint hearing before two district court judges. A significant record on the current state of science of polygraph was developed through testimony from two prominent Ph.D level experts and by submission of extensive written scientific and legal authority. At the conclusion of the hearing these judges issued a detailed joint order in which they concluded to admit the polygraph evidence in their respective cases.

The amicus brief of the APA is reprinted here in full. It represents the most comprehensive effort by the APA to date to set out a position on admissibility of results of polygraph tests.

The *Alexander* case represents, perhaps, the best opportunity in many years for an appellate court to provide an opinion – with the benefit of a reasonably presented record - regarding the current status of polygraph and its place as evidence in court. A decision from the Alaska Court of Appeals is expected in late 2014 or early 2015. That decision will be subject to possible consideration by the Alaska Supreme Court. As such, it will likely be some time before a final outcome is determined.

## IN THE COURT OF APPEALS OF THE STATE OF ALASKA

| STATE OF ALASKA                      | )     |  |
|--------------------------------------|-------|--|
| Petitioner/Cross-Respondent.         | )     |  |
| ,                                    | )     |  |
| VS.                                  | ) )   | Court of Appeals Nos.<br>A-11423/11433 |
| THOMAS ALEXANDER and JAMES GRIFFITH, | ) ) ) |  |
| Respondents/Cross Petitioner.        | ) )   |  |
| Trial Court No. 3AN-09-11088 CR      | )     |  |

Trial Court No. 3SP-11-00103 CR

# PETITION FOR REVIEW FROM THE SUPERIOR COURT THIRD JUDICIAL DISTRICT AT ANCHORAGE & SAND POINT GREGORY MILLER, DANIEL SCHALLY, JUDGES

#### BRIEF OF AMICUS AMERICAN POLYGRAPH ASSOCIATION

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#### **INTEREST OF AMICUS CURIAE**

The American Polygraph Association ("APA") was established in 1966 and is a professional association of over 2,500 national and international polygraph examiners and academic researchers in the private sector, law enforcement, and government fields. The APA was formed by the merger of the Academy of Scientific Interrogation, the American Academy of Polygraph Examiners, the National Board of Polygraph Examiners, and the International Association of Polygraph Examiners.

The objectives of the APA are that of advancing the use of polygraph as a science and a profession. APA members have a particular interest in ensuring that this Court is informed about the modern polygraph instrument and examination procedure, the current scientific research on the validity of polygraph results, and legal issues associated with polygraph evidence.

# ADOPTION OF STATEMENT OF ISSUES PRESENTED FOR REVIEW, STATEMENT OF THE CASE, AND STANDARD OF REVIEW

Amicus accepts and adopts the Statement of Issues Presented for Review, Statement of the Case, and Standard of Review set out in the brief of Respondent Alexander.

#### **ARGUMENT AND AUTHORITY**

"Any rule that impedes the discovery of truth in a court of law impedes as well the doing of justice."

Justice Potter Stewart<sup>1</sup>

Hawkins v. United States, 358 U.S. 74, 81 (1958) (Stewart, J., concurring).

#### **SUMMARY OF ARGUMENT**

In 1970, the Alaska Supreme Court in *Pulakis v. State*, 476 P.2d 474 (Alaska 1970), declined to permit admission of polygraph evidence following consideration of the then available scientific literature. The Court was careful to note that "[t]his is not to say that the worth of polygraph evidence cannot ever be proved to the satisfaction of this court" and that "acceptance of polygraph tests must await the results of more persuasive experimental proof of reliability." *Id.* at 479. In the forty-three years since *Pulakis*, there has been no apparent occasion in which an Alaska appellate court has considered admissibility of polygraph evidence under the *Daubert/Coon* standard and in the context of a developed evidentiary record regarding the current state of scientific research regarding polygraph.

Superior Court Judge Gregory Miller, on direction from this Court, along with Superior Court Judge Daniel Schally in a similar matter pending in his court, conducted a joint *Daubert/Coon* hearing in which a significant record was developed through two Ph.D.- level experts, submission of extensive written authority, and argument. Following the hearing, they issued a detailed joint order in which they both concluded to admit the polygraph evidence in their respective cases. Most of the scientific research presented was published or reported following the decision in *Pulakis*. In fact, of the fifty-seven studies accepted in the National Academy of Science's review of polygraph,<sup>2</sup> fifty-four were published or reported after *Pulakis*. Judges Miller and Schally heard significant and ample evidence that modern comparison question, specific-event polygraph testing produced valid results in the high 80<sup>th</sup> to low 90<sup>th</sup>

Discussed in more detail, infra.

percentiles - an accuracy rate comparable to and exceeding many other types of scientific proof routinely accepted by the courts.

Judges Miller and Schally's *Daubert/Coon* evidentiary decision is reviewable only for abuse of discretion. The abuse of discretion standard calls on the reviewing court to accept the evidence in the light most favorable to the non-movant on appeal. Even if a reviewing court may have weighed the evidence differently, the abuse of discretion standard of review does not contemplate substituting an appellate court's discretion for that of the trial court. This abuse of discretion standard is the cornerstone of the "flexibility" invested in trial courts to "keep pace with science as it evolves."<sup>3</sup> Here, Judges Miller and Schally carefully and meticulously considered the evidence supporting polygraph admissibility. As set out herein, that evidence is scientifically well grounded and ample and, as such, Judges Miller and Schally did not abuse their discretion in determining that the polygraph evidence was admissible.

#### I. THE ADMISSIBILITY OF POLYGRAPH EVIDENCE

#### A. From *Frye to Daubert*

Modern consideration of polygraph evidence and, coincidentally, scientific evidence in general began with the seminal case of *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).<sup>4</sup> There, defendant Frye appealed his conviction for murder on the ground that the trial court erroneously refused to admit defense evidence based on a systolic blood pressure deception

State v. Coon, 974 P.2d 386, 399 (Alaska 1999).

<sup>&</sup>lt;sup>4</sup> Prior to *Frye*, a court's typical inquiry regarding admissibility of scientific evidence was only whether the expert was "qualified." A. Osborn, *Reasons and Reasoning in Expert Testimony*, 2 Law & Contemp. Probs., 488, 489 (1935).

test, a crude precursor to the present-day polygraph. In fact, the systolic blood pressure deception test used in *Frye* was not a polygraph test at all<sup>5</sup> but was based on a periodic sampling of readings from a simple blood pressure cuff during a dialogue with the defendant concerning the alleged crime. These blood pressure recordings were not continuous, and no apparent formal questioning technique or analysis was conducted. C. Honts & B. Quick, *The Polygraph in 1995: Progress in Science and the Law*, 71 N.D. L. Rev. 987, n.3 (1995) (hereinafter "Honts & Quick, *The Polygraph in 1995*").

Although the *Frye* court's decision was short and citation-free, its holding, which became known as the "*Frye* test," went far beyond the particular evidence under review and set what became the general standard for evidentiary review of scientific evidence. The *Frye* court noted:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

Frye, 293 F. at 1014. As to the unsophisticated systolic blood pressure deception-testing test, the

Frye court concluded that it had not gained sufficient acceptance among physiological and

psychological authorities to be admissible.

The *Frye* test dominated the admissibility of scientific evidence in general, and polygraph evidence in particular, for the next seventy years. During that time, while other

<sup>&</sup>lt;sup>5</sup> "Poly" meaning "many" refers to the multiple areas of physiological response recorded by the modern polygraph instrument. The modern polygraph instrument and testing techniques are discussed in more detail in section II(A)(1) of this brief.

forms of novel scientific evidence were deemed to have developed the level of acceptability mandated by *Frye*, the advances in the study of psychophysiology, as applied to polygraph testing, went all but ignored by the courts. J. McCall, *Misconceptions and Reevaluation - Polygraph Admissibility After Rock and Daubert*, 1996 U. Ill. L. Rev. 363, n.25 (1996) (hereinafter "McCall, *Misconceptions and Reevaluation*").

There were occasional exceptions to the exclusionary trend, such as *United States v. Piccinonna*, 885 F.2d 1529 (11th Cir. 1989). *Piccinonna* provided the first thorough federal judicial consideration of the modern polygraph and determined that "[s]ince the *Frye* decision, tremendous advances have been made in polygraph instrumentation and technique." *Id.* at 1532. The court further noted that "the FBI, the secret service, military intelligence and law enforcement agencies use the polygraph" (*id.*); that "in recent years polygraph testing has gained increasingly widespread acceptance as a useful and reliable scientific tool" (*id.* at 1535); and that "a per se rule disallowing polygraph evidence is no longer warranted." *Id.* The *Piccinonna* court went on to articulate standards for polygraph admissibility in the Eleventh Circuit – a decision that is in force today but is often honored in its breach. *See United States v. Gilliard*, 133 F.3d 809 (11th Cir. 1998) (applying *Piccinonna* but upholding exclusion of polygraph evidence).

Over time, the *Frye* general acceptance test came under severe criticism by courts and commentators as overly conservative. The standard was vague, obscured the relevant inquiries, and deprived courts and parties from the use of important scientific evidence while such evidence endured the inevitable gestation and debates within the scientific community. D. Faigman, et al., 1 *Modern Scientific Evidence: The Law and Science of Expert Testimony*, § 1:6

(2012). Additionally, the *Frye* test required general acceptance in the particular relevant field of the scientific community, a requirement that was sometimes difficult to apply as scientific information often extends into multiple academic disciplines and sub-disciplines. *See* P. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, A Half Century* 

Later, 80 Colum. L. Rev. 1197, 1209 (1980).

The Supreme Court of the United States expressly replaced the *Frye* test for determining admissibility of scientific evidence in *Daubert v. Merrell Dow Pharmaceuticals*, Inc., 509 U.S. 579, 587 (1993). *Daubert* concluded that the austere *Frye* approach of relying on general acceptance in the scientific community was too restrictive given the more liberal approach to admissibility of the modern federal rules of evidence in general and, in particular, Fed. R. Evid. 702. Fed. R. Evid. 702, in its current form, provides:

A witness who is qualified as an expert by knowledge, skill, experience, training,

or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

The *Daubert* Court placed substantial discretion in the trial court to act as the gatekeeper responsible for determining the admissibility of scientific testimony. To fulfill this gatekeeping function, district courts often hold "*Daubert*" or Fed. R. Evid. 104 hearings, outside the presence of a jury, to assess whether the tendered scientific evidence meets *Daubert* and Rule 702 standards. A failure to provide an opportunity for such hearing might, under certain circumstances, constitute an abuse of discretion. *See, e.g., United States v. Smithers*, 212 F.3d 306 (6<sup>th</sup> Cir. 2000). Whether a Rule 104 hearing is held or not, the district court must create a

sufficient record so that the decision on whether the trial court abused its discretion can be reviewed. As stated by the Tenth Circuit Court of Appeals in *Goebel v. Denver and Rio Grande Western R.R. Co.*, 215 F.3d 1083 (10th Cir. 2000):

[w]ithout specific findings or discussion on the record, it is impossible on appeal to determine whether the district court "carefully and meticulously' review[ed] the proffered scientific evidence" or simply made an off-the-cuff decision to admit the expert testimony.

Id. at 1088 (quoting United States v. Call, 129 F.3d 1402, 1405 (10th Cir. 1997)).

*Daubert* provided some general guidelines in determining whether the offered evidence is based on scientific knowledge – that is, whether it has been derived by the scientific method rather than unsupported speculation. Notably, in contrast to *Frye*, the Supreme Court in *Daubert* did not find that there was an automatic bar to admission of scientific evidence where the scientific community was divided about the science.

The relevant factors suggested by the *Daubert* opinion included: (1) whether the theory or technique on which the testimony is based is capable of being tested; (2) whether the theory or technique has a known rate of error in its application; (3) whether the theory or technique has been subjected to peer review and publication; and (4) the level of acceptance in the relevant scientific community of the theory or technique. As was later verified in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152-53 (1999), none of the factors suggested in *Daubert* was to be rigidly dispositive, and the inquiry was to be a flexible one, keeping in mind the competing needs of keeping untrustworthy pseudoscience from the jury and of keeping the courts open to scientific developments.

#### B. Post-Daubert Admissibility of Polygraph Evidence

#### 1. United States v. Scheffer

The United States Supreme Court has never addressed the admissibility of polygraph evidence under *Daubert*. The only time the Court has faced any substantial issue regarding polygraph evidence admissibility was in *United States v. Scheffer*, 523 U.S. 303 (1998). Consideration of *Scheffer*, here, is appropriate as *Scheffer* is often misread as a basis for categorical exclusion of polygraph evidence.

The Scheffer case originated in the military courts. The United States Armed Forces have for many years studied and used the polygraph, and, beginning with United States v. Gipson, 24 M.J. 246 (C.M.A. 1987), the military courts formally recognized the scientific reliability of the polygraph and the propriety of its use as evidence. The executive branch of the federal government responded to *Gipson* by issuing a new military rule of evidence to impose a *per se* exclusion on polygraph evidence for the military courts, precluding any possibility of making a showing of scientific reliability or relevance. Scheffer tested the constitutionality of that *per se* exclusion under those provisions of the Sixth Amendment which guarantee the right of the accused to have his defense evidence heard. That theory had previously been relied upon to strike down evidentiary bans on the ability of the accused to introduce exculpatory, hearsay statements; accomplice testimony; and hypnotically-refreshed testimony. G. Dery, *Mouse Hunting with an Elephant Gun: The Supreme Court's Overkill in Upholding a Categorical Rejection to Polygraph Evidence in United States v. Scheffer*, 26 Am. J. Crim. L. 227 (Spring 1999). The defendant, Scheffer, was an airman charged with using drugs and, as part of the investigation, had been administered both a urinalysis and a polygraph by the Air Force. The urinalysis expert concluded that traces of methamphetamine were found in his urine, and the polygraph expert reported that the airman did not show signs of deception when he denied knowingly ingesting the drugs. As a result of the new exclusionary evidence rule, the court martial panel was not allowed to hear the polygraph evidence while the urinalysis was admitted. The airman appealed his resulting conviction, and the Court of Appeals for the Armed Forces held that a rule imposing a *per se* exclusion of polygraph evidence violated the airman's Sixth Amendment right to present a defense. The government appealed the case to the United States Supreme Court, which reversed the Court of Appeals and reinstated the conviction.

Those who hoped the *Scheffer* opinion would provide some definitive answers to the issues surrounding polygraph use in United States courts found little resolution in the plurality decision. *See* Comment, *Between a Rock and a Hard Place: Polygraph Prejudice Persists After Scheffer*, 47 Buffalo L. Rev. 1533 (1999). There were, in fact, three separate opinions in *Scheffer*, none garnering the full support of a majority of the nine-member Court.

The principal holding in *Scheffer* was that if a jurisdiction, by codified evidentiary rule, chooses to exclude polygraph evidence, it is not absolutely precluded to do so by the United States Constitution, at least at the present time. That conclusion was shared by the four justices supporting the Thomas opinion ("the Thomas four" – Thomas, Rehnquist, Scalia, and Souter) and the four justices supporting the Kennedy opinion ("the Kennedy four" – Kennedy, O'Connor, Ginsburg, and Breyer).

Only the Thomas four believed that the *per se* exclusion was appropriate. The Kennedy four reluctantly joined the Thomas four on the constitutional issue to avoid binding all court systems in the country to a constitutional ruling that they have no power to choose statutorily to exclude polygraph evidence, joining only on the ground that such rule of exclusion was not so arbitrary or disproportionate that it was unconstitutional. The Kennedy four went on to say, however, that they did not agree that the *per se* exclusion was wise and that a later case might cause them to re-examine their agreement with the constitutionality of the exclusionary position. The Kennedy four also acknowledged the tension between the *Scheffer* result and the *Daubert* doctrine, as well as the inconsistency between the government's oppositionist position to the use of polygraphs by the accused while it makes widespread use of polygraph tests in conducting its own business.

Justice Stevens was clear in his separate dissent that the courts should be open to admission of polygraph results and that the Sixth Amendment does prohibit a *per se* exclusion of polygraph evidence.

The plurality opinion of the Thomas four has been criticized as flawed and inconsistent with Sixth Amendment jurisprudence on the right of the accused to present a defense. E. Imwinkelried, *A Defense of the Right to Present Defense Expert Testimony: The Flaws in the Plurality Opinion in United States v. Scheffer*, 69 Tenn. L. Rev. 539 (2002). In any event, *Scheffer* resulted in no resolution of the *Daubert* question for polygraphs in the federal courts. See J. Bush, *Warping the Rules: How Some Courts Misapply Evidentiary Rules to Exclude Polygraph Evidence*, 59 Vand. L. Rev. 539, 556 (2006) ("Scheffer...only addressed a *per se* 

inadmissibility rule and thus never needed to conduct a *Daubert* analysis. Accordingly, ... *Scheffer* should not end the *Daubert* analysis.") Significant to resolution of questions of admissibility in jurisdictions that do not have a codified *per se* exclusion of polygraph, a majority of the justices in *Scheffer* did resolve favorably for polygraph proponents two issues often associated with justification for polygraph evidence exclusion: the questions of usurpation of the jury function and avoiding collateral litigation.

As to the usurpation argument, the Kennedy four in their concurrence and Stevens in his dissent rejected the argument. In his concurring opinion, Justice Kennedy characterized the notion of jury usurpation as "empty rhetoric" and wrote:

...it seems the principal opinion overreaches when it rests its holding on the additional ground that the jury's role in making credibility determinations is diminished when it hears polygraph evidence. I am in substantial agreement with Justice STEVENS' observation that the argument demeans and mistakes the role and competence of jurors in deciding the factual question of guilt or innocence. [Citation omitted.] In the last analysis the principal opinion says it is unwise to allow the jury to hear "a conclusion about the ultimate issue in the trial." [Citation omitted.] I had thought this tired argument had long since been given its deserved repose as a categorical rule of exclusion.

Scheffer, 523 U.S. at 318-19 (concurring opinion of Justice Kennedy). Justice Stevens agreed,

#### writing:

There is, of course, some risk that some "juries will give excessive weight to the opinions of a polygrapher, clothed as they are in scientific expertise." [Citation omitted.] In my judgment, however, it is much more likely that juries will be guided by the instructions of the trial judge concerning the credibility of expert as well as lay witnesses. . . . Common sense suggests that the testimony of disinterested third parties that is relevant to the jury's credibility determination will assist rather than impair the jury's deliberations. As with the reliance on the potential unreliability of this type of evidence, the reliance on a fear that the average jury is not able to assess the weight of this testimony reflects a distressing lack of confidence in the intelligence of the average American. Id. at 336-37 (dissenting opinion of Justice Stevens). Thus, a majority of the Supreme Court has

rejected the usurpation argument. See also A. Shniderman, You Can't Handle the Truth: Lies,

Damn Lies, and the Exclusion of Polygraph Evidence, 22 Albany L.J. Sci. & Tech. 433, 465

(2012) (hereinafter "Shniderman, You Can't Handle the Truth") (noting that many courts have

failed to note or ignored "the fact that a majority of the justices rejected the usurpation argument").

As to the issue of the burden of collateral litigation, Justice Stevens stated:

Such [collateral] proceedings are a routine predicate for the admission of any expert testimony, and may always give rise to searching cross-examination. If testimony that is critical to a fair determination of guilt or innocence could be excluded for that reason, the right to a meaningful opportunity to present a defense would be an illusion.

\* \* \* \*

The interest in avoiding burdensome collateral proceedings might support a rule prescribing minimum standards that must be met before any test is admissible, but it surely does not support the blunderbuss at issue.

Scheffer, 523 US. at 337-38 (dissenting opinion of Justice Stevens). The Kennedy four agreed

with Stevens in refusing to concur with the collateral litigation portion of the Thomas four

opinion. Id. at 318 (concurring opinion of Justice Kennedy) (joining in only Parts I, II-A, and

II-D of the Thomas opinion). This result was observed in United States v. Wheeler, 66 M.J.

590 (N.M. Ct. Crim. App. 2008) where the court noted:

[The Kennedy four] agreed with the plurality's determination that Rule 707 is "not so arbitrary or disproportionate that it is unconstitutional." However, they specifically disavowed legitimate governmental interests two and three, that allowing polygraph evidence would impermissibly invade the province of the trier of fact, and the concerns of allowing such evidence would lead to litigation of collateral issues at trial.

Id. at 593-94 (internal citations omitted).

A number of lower courts have been confronted with the implications of Daubert for

the admissibility of polygraph evidence. Some have acknowledged that the rigid, exclusionary

stance of the *Frye* years was no longer justified and that a fresh *Daubert* analysis was required. *United States v. Cordoba*, 104 F.3d 225, 228 (9th Cir. 1997); *United States v. Pulido*, 69 F.3d 192, 205 (7th Cir. 1995); *United States v. Posado*, 57 F.3d 428, 423-34 (5th Cir. 1995).

Several of the more thorough analyses of the *Daubert* factors in reported trial court opinions resulted in findings that the modern control question polygraph is scientific evidence which should be admitted under Fed. R. Evid. 702. *United States v. Galbreth*, 908 F. Supp. 877, 895-96 (1995); *United States v. Crumby*, 895 F. Supp. 1354, 1365 (D. Ariz. 1995); *Ulmer v. State Farm Fire & Casualty Co.*, 897 F. Supp. 299, 303-04 (W .D. La. 1993); *State v. Sharma*, 875 N.E.2nd 1002 (Ohio Ct. Common Pleas 2007). However, a number of the post-*Daubert* opinions continue to express reluctance to change their exclusionary positions on polygraph evidence. *See United States v. Call*, 129 F.3d at 1405 ("our holding [that *Daubert* allows a possibility of admitting polygraph] does not suggest a newfound enthusiasm for polygraph evidence").

State courts have taken widely varying stances on the admissibility of polygraph results during court proceedings. While many states continue an outright rejection of polygraph evidence, many states permit its admissibility upon stipulation of the parties. *Compare Commonwealth v. Mendes*, 547 N.E.2d 35, 39-40 (Mass. 1989), *with Battles v. State*, 719 S.E. 2d423, 427-28 (Ga. 2011) and *Jackson v. State*, 735 N.E.2d 1146, 1153-54 (Ind. 2000).<sup>6</sup> There is a split of authority regarding the admissibility of evidence of polygraph in

<sup>&</sup>lt;sup>6</sup> Nineteen states have now expressly permitted admission of polygraph evidence by stipulation. Of the remaining states, with the exception of general admissibility in New Mexico, "courts either reject admission of polygraphs, including by stipulation, or have not addressed the issue." *See* N. Ansley & G. Vaughan, *Polygraph Quick Reference Guide to the Law*, 18th ed., American Polygraph Association (2007).

suppression, sentencing, and post-conviction proceedings. Compare Billips v. Commonwealth, 630 S.E.2d 340, 354-55 (Va. App. 2006); with State v. Lumley, 977 P.2d 914, 917-21 (Kan. 1999); and People v. McKinnev, 357 N.W. 2d 825, 828 (Mich. App. 1984), with State v. Pierce, 138 S.W. 3d 820, 825-26 (Tenn. 2004). At least one circuit has held that polygraph evidence during the penalty phase of a capital case violated the defendant's constitutional right to due process. See Rupe v. Wood, 93 F.3d 1434 (9th Cir. 1996); but see United States v. Fulks, 454 F.3d 410 (4<sup>th</sup> Cir. 2006). Polygraph evidence has also been permitted by some courts in administrative proceedings. See, e.g., Evans v. DeRidder Mun. Fire, 815 So. 2d 61, 71 (La. 2002); but see Harris v. Novello, 276 A.D.2d 848, 850 (N.Y.A.D. 3 Dept. 2000). Still other courts are permitting polygraph evidence in bench trials. See, e.g., State v. Domicz, 873 A.2d 630, 656-58 (N.J. Super. Ct. App. Div. 2005); but see State v. Carpenter, 734 So. 2d 866, 872 (La. App. 1999). Most states have passed legislation providing for post-conviction testing of sex offenders to aid in therapy and to protect the community. See, e.g., A. Kebrick, Polygraph Testing in Sex Offender Treatment: A Constitutional and Essential Tool for Effective Treatment, 41 Ariz. St. L.J. 429 (2009); K. English, The Containment Approach to Managing Sex Offenders, 34 Seaton Hall L. Rev. 1255, 1262 (2004) ("[t]he criminal justice supervision activity... is informed and improved by the information obtained during a well-conducted postconviction polygraph...").

#### 2. Lee v. Martinez

New Mexico has, for many years, generally permitted the introduction of unstipulated polygraph evidence. The New Mexico Supreme Court initially found in favor of the admissibility of unstipulated polygraph evidence in *State v. Dorsey*, 539 P.2d 204 (N.M. 1975).

There, a defendant appealed the trial court's exclusion of his polygraph examination. In reversing the trial court, the New Mexico Supreme Court held that the rule of inadmissibility was mechanistic in nature, inconsistent with the concept of due process, repugnant to the announced purpose and construction of the new rules of evidence, and particularly incompatible with the purpose and scope of the scientific evidence and the relevance rules, which focus on whether the evidence will offer any help to the trier of fact in deciding the issue. Later, the New Mexico Supreme Court codified admissibility of polygraph evidence in N.M.R.E. 11-707, wherein strict provisions for polygraph examiner qualifications and testing protocol were established.

The New Mexico Supreme Court was, in 2004 in *Lee v. Martinez*, 96 P.3d 291 (N.M. 2004), called upon to consider whether to repeal N.M.R.E. 11-707 and its rule of polygraph admissibility and hold that polygraph results were *per se* inadmissible. In order to address this issue, the court designated a district court judge to hold hearings "for the limited purpose of conducting an evidentiary hearing as to the scientific reliability of polygraph evidence." *Id.* At 293. The district court held several days of hearings in which nationally-recognized experts testified both for and against repeal of Rule 11-707. The New Mexico Supreme Court, in a *de novo* review of the evidence, presented to the district court and after undertaking an extensive *Daubert* analysis,<sup>7</sup> held that polygraph results are sufficiently reliable to be admitted under New

<sup>&</sup>lt;sup>7</sup> New Mexico follows a Daubert-type analysis for admissibility of expert testimony. *See State v. Alberico*, 861 P.2d 192 (N.M. 1993). The *Lee v Martinez* court considered, item by item and in detail each of the *Daubert/Alberico* factors for reliability: testability, error rate, peer review and publication, and general acceptance in the scientific community as well as addressing the scientific underpinning, standards and controls in the

Mexico's Rule 11-702, as long as the expert is qualified and the examination was conducted in accordance with New Mexico's Rule 11-707.

In so holding, the New Mexico Supreme Court noted that "criticism of the polygraph was better addressed in cross-examination, presentation of rebuttal evidence, and argumentation." *Lee v. Martinez*, 96 P.3d at 306. The court further noted that its reaffirmation of Rule 11-707 was based, in part, "on principles of fairness" observing that

[0]ften the same government officials who vigorously oppose the admission of exculpatory polygraphs of the accused find polygraph testing to be reliable enough to use in their own decision-making.

*Id.* Like the Kennedy four and Justice Stevens in *Scheffer*, the *Lee v. Martinez* court concluded that "a categorical exclusion of polygraph results would be unwise." *Id.* 

#### 3. Alaska Pre- and Post-Daubert Treatment of Polygraph Evidence

In 1999, the Alaska Supreme Court held in *State v. Coon*, 974 P.2d at 402-03, that the Alaska Rules of Evidence superseded the *Frye* test and adopted the standard for admissibility of scientific evidence established by the United States Supreme Court in *Daubert*, 509 U.S. 579. The court agreed that the *Daubert* standards provided a "useful approach" for "trial courts [to] assess the reliability and relevance of proffered scientific evidence." *Coon*, 974 P.2d at 395. The court endorsed the "gatekeeping" role of the trial court to determine admissibility of scientific evidence and, upon consideration of the proper standard of review for trial court evidentiary determinations made in such gatekeeping role, noted:

industry. Notably, the principal experts who testified here were also experts in *Lee v*. *Martinez*, 96 P.3d. 291.

The principal reason for adopting the *Daubert* standard is to give the courts greater flexibility in determining the admissibility of expert testimony, so as to keep pace with science as it evolves. We think the abuse of discretion standard of review best comports with these aims, and we choose to apply it here.

#### *Id*. at 399.

Since the Alaska Supreme Court decision in *Coon* in 1999, there has been no apparent occasion in which an Alaska appellate court has considered admissibility of polygraph evidence under the *Daubert/Coon* standard and in the context of a developed evidentiary record. Indeed, since the Alaska Supreme Court's initial rejection of polygraph evidence in *Pulakis*, it does not appear that any Alaska appellate court has considered admissibility of polygraph evidence under any standard in which the evidentiary record has been sufficiently developed.

Prior to adopting *Daubert* in *Coon*, the Alaska Supreme Court determined in *Pulakis*, 476 P.2d at 479, to reject polygraph evidence following its study of the then available scientific literature. However, the *Pulakis* court was careful to note that "[t]his is not to say that the worth of polygraph evidence cannot ever be proved to the satisfaction of this court" and that "acceptance of polygraph tests must await the results of more persuasive experimental proof of reliability." *Id*.

In *Troyer v. State*, 614 P.2d 313 (Alaska 1980), the Alaska Supreme Court was asked again to consider admissibility of polygraph evidence. Noting authority suggesting recent evidence of increased reliability of polygraphs, the court determined that the proponent for polygraph admissibility did not make a sufficient foundation for admissibility to permit the court "to make an informed decision concerning the reliability of the technique today." *Id.* at n.12. Similarly, in *Van Meter v. State*, 743 P.2d 385, 387-88 (Alaska App. 1987), the

proponent for admissibility, though requesting an evidentiary hearing and providing information regarding the qualifications of the polygraph examiner, "never offered to make [an evidentiary] showing" regarding the "general reliability of polygraph testing as a scientific process." Following the decision in *Van Meter*, the defendant in *Haakanson v. State*, 760 P.2d 1030 (Alaska App. 1988), sought admission of evidence of polygraph results only through testimony from the same polygraph examiner as tendered as an expert in *Van Meter*. The state tendered as an expert William Iacono (the state's same expert who testified against polygraph here) who was noted to be "in a profession which studies the polygraph and its scientific basis" and was thus in a position to address better admissibility under the *Frye* standards. *Id.* at 1034.

#### 4. Application of the *Daubert* Gatekeeping Function

It is within the discretion of the trial court to determine how to perform its gatekeeping function under *Daubert. See Kumho Tire*, 526 U.S. at 152 ("[t]he trial court must have [discretionary] latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability...") (emphasis added). While the district court has discretion in the manner in which it conducts its *Daubert* analysis, there is no discretion regarding the actual performance of the gatekeeper function. *See Kumho Tire*, 526 U.S. at 158-159 (Scalia, J., concurring) (noting that the majority opinion "makes clear that the discretion it endorses – trial-court discretion in choosing the manner of testing expert reliability – is not discretion to abandon the gatekeeping function").

Review of a trial court's exercise of its *Daubert* gatekeeping function is for abuse of discretion. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 139 (1997). Under an abuse of discretion standard, a ruling will not be disturbed on appeal unless it is "arbitrary, capricious, whimsical

or manifestly unreasonable" or when the appellate court is convinced that the trial court "has made a clear error of judgment or exceeded the bounds of permissible choice in the circumstances." *Atlantic Richfield Co. v. Farm Credit Bank of Wichita*, 226 F.3d 1138, 1163 (10th Cir. 2000) (citations omitted). Because trial courts have discretion regarding their ultimate decisions on admissibility decisions, "[c]ourts assessing the same evidence may thus reach contradictory conclusions on its admissibility yet have their rulings affirmed as within their discretion." Note, *Reliable Evaluation of Expert Testimony*, 116 Harv. L. Rev. 2142, 2146 (2003).

Alaska, as previously observed, adopted the *Daubert* standard in *Coon*. In the same way the United States Supreme Court has described the considerable discretion of the trial court to manage expert evidence through its gatekeeping role, so too the Alaska Supreme Court has conceded similar deference to trial court discretion. See L.C.H. v. T.S., 28 P.3d 915, 919 (Alaska 2001) ("We review 'the trial court's admission or exclusion of evidence for abuse of discretion' and reverse 'such a decision only when left with the definite and firm conviction that the trial court erred in its decision'" (citation omitted.).) Discussing the abuse of discretion standard, the court in *Barbara P. v. State Dept. of Health & Social Svcs.*, 234 P.3d 1245, 1253 (Alaska 2010), held that under the abuse of discretion standard, the record is reviewed in the light most favorable to the party prevailing below. Generally, a trial court will be found to have abused its discretion only in "exceptional circumstances." *Smiloff v. State*, 439 P.2d 772, 789 (Alaska 1968).

On this basis, Alaska appellate courts have, for example, upheld the trial court's discretion in admitting expert testimony regarding: a dog's ability to alert to smell of cash and

gold nuggets (*Stepovich v. State*, 299 P.3d 734, 738-739 (Alaska App. 2013)); standards for construction of sports fields (*Barton v. North Slope Borough School Dist.*, 268 P.3d 346 (Alaska 2012)); psychological testing and evaluation (*Martha S. v. State, Dep't of Health & Soc. Servs., Office of Children's Servs.*, 268 P.3d 1066, 1069 (Alaska 2012), *reh'g denied* (Feb. 22, 2012)); and evidence regarding profiles of child sexual abusers (L.C.H. v. T.S., 28 P.3d at 923).

### II. APPLYING *DAUBERT/COON*, THE TRIAL COURTS' DISCRETIONARY DECISION TO ADMIT POLYGRAPH EVIDENCE SHOULD NOT BE DISTURBED

This appeal does not, like others that have come to this Court since *Pulakis*, come on an undeveloped record regarding the development of the science of polygraph. Rather, it comes following this Court's prior determination that the trial court abused its discretion in denying an evidentiary hearing on the issue of polygraph evidence admissibility. It also comes after the trial courts' development of a record through testimony of two well-known Ph.D.-level experts in the field, presentation of considerable documentary evidence, and ample argument of counsel. Finally, it comes after not one but two trial court judges - Judges Gregory Miller and Daniel Schally - after performing their roles as gatekeepers for admissibility of scientific evidence, issued a 54-page joint ruling and order, finding that evidence of polygraph test results in their respective cases was admissible.

As an appellate court cannot substitute its discretion for that of the trial court, the question is not whether this Court, had it considered the evidence, would have come to a different conclusion. Rather, the question is whether the discretionary decision of these trial court judges, viewing the evidence in the light most favorable to their decisions, was so

completely lacking in evidence or was so slight and unconvincing as to make their decision an abuse of discretion. Based on the record as developed below and the current status of the science of polygraph, Judges Miller and Schally did not abuse their discretion to admit polygraph evidence, and their joint decision should not be disturbed on appeal.

# A. The Weight of Scientific Research Supports the Use and Reliability of Polygraphs<sup>8</sup>

Polygraph testing falls within the scientific field of psychophysiology. A. Dollins, et al., *Efficacy of Repeated Psychophysiological Detection of Deception Testing*, 43 J. Forensic Sci. 1016, 1016 (1998) (hereinafter "Dollins, et al."). Although the field of psychophysiology has, over the last several decades, grown and includes many sub-specialties, the field can be generally defined as the Scientific measurement, mapping, and study of the relationship between psychological states and physiological reactions. J. Cacioppo, et al., *Psychophysiological Science*, Handbook of Psychophysiology, 2nd ed., 6 (Cacioppo, et al., eds. 2000). Polygraph testing is properly characterized as "psychophysiological detection of deception" ("PDD") as it involves observing and measuring changes in physiological activity that is correlated with deception and truth-telling. Dollins, et al., at 1016. C. Honts & M. Handler, *A Case Study of the Validity of the Arther Examination Procedures in a Criminal Case with DNA Confirmation*, 42 Polygraph 61, 61 (2013) (hereinafter "Honts & Handler").

<sup>&</sup>lt;sup>8</sup> Undersigned counsel acknowledges the assistance of Raymond Nelson in providing insights into the scientific research regarding polygraph testing through personal consultation and review of his in-progress article with the working title "*Scientific Basis of Polygraph Testing*." As the article is not yet complete or in publication, no citation or attribution to the article is made beyond this acknowledgment. All sourcing and citation herein inspired by Mr. Nelson's consultation and in-progress article are independently attributed to otherwise available public domain sources.

#### 1. The Polygraph Instrument and Testing Technique

Modern polygraph instrumentation consists of measuring, minimally, three physiological systems through the use of component sensors: two pneumograph sensors that record thoracic and abdominal respiratory activity, electrical sensors that record electrodermal activities in the palmar or distal regions, and cardiovascular sensors that record relative changes in cardiovascular activity. There is little controversy in the scientific literature regarding the accuracy of the recordings of these physiological responses. P. Giannelli & E. Imwinkelried, et al., *1 Scientific Evidence* 664 (5th ed. 2013) (hereinafter "Giannelli & Imwinkelried, *Scientific Evidence* 664 (5th ed. 2013) (hereinafter "Giannelli & Imwinkelried, *Scientific Evidence*"). Federal government testing protocols and professional association protocols call for the use of activity sensors to identify countermeasures. It is also a recommended standard of practice of the APA and the American Association of Police Polygraphists, as well as experts in the field, that all forensic PDD examinations be recorded. Honts & Handler at 61.

Polygraph testing involves several phases, including: a pre-test interview, testing or data collection, and test data analysis. The first phase, the polygraph pre-test interview, is intended to orient the examinee to the examination room, examination equipment, audio and/or video recording devices, and testing procedures, including the purpose of the test and the investigation target questions. The interview is intended to allow truthful examinees to become adjusted to the cognitive and emotional impact of hearing and responding to test questions that describe their possible involvement in problematic behaviors. The examiner will also provide information to the examinee about the psychological and physiological basis for the polygraph test and will attempt to answer any questions the examinee may have regarding the testing procedures. *See* D. Raskin & C. Honts, *The Comparison Question Test*, Handbook of

Polygraph Testing 2 (Kleiner ed. 2002) (hereinafter "Raskin & Honts"); Honts & Handler at 61. During this phase, the examiner will develop the test questions with the examinee. M. Kleiner, *Physiological Detection of Deception in Psychological Perspectives: A Theoretical Proposal*, Handbook of Polygraph Testing 128 (Kleiner ed. 2002).

The second phase of the polygraph examination is the in-test data collection.<sup>9</sup> All polygraph techniques include relevant questions that describe the examinee's possible involvement in the behavioral issues under investigation. Examiners are trained to develop relevant questions that are simple, direct, and avoid legal or clinical jargon for which the correct meaning may be confusing or not recognizable to non-professionals.

Until approximately 1950, most polygraph testing used the relevant/irrelevant ("RIT") question format. McCall, *Misconceptions and Reevaluation*, at 378. Generally, the RIT test compares the relative physiological reactivity of relevant questions (questions addressing behavioral involvement of the examinee in the issue of concern) to irrelevant questions (questions unrelated to the matter under investigation). *Id.* at 410 n.333. Since its development in 1947, the comparison question or control question ("CQT") format has been the most widely used and exhaustively researched polygraph technique. Rather than comparing the relative physiological reactivity of relevant questions, the CQT compares relative

<sup>&</sup>lt;sup>9</sup> Like other forms of scientific testing, all polygraph examinations are intended to address either screening or diagnostic purposes. The difference between screening and diagnostic polygraph examinations involves the existence or absence of a known incident or known allegation for which the examinee is suspected of involvement. Screening examinations typically cover multiple relevant subject areas. Absence of a known problem is the defining characteristic of a screening test. Considered here are diagnostic or event specific examinations.

physiological reactivity of deceptive responses to troubling but inconsequential questions

(comparison questions, sometimes referred to as control questions<sup>10</sup>) and relevant questions.

The CQT is summarized as follows:

The CQT differs from the RIT in that physiological reactions to relevant questions are compared to those produced by control (probable-lie) questions. Since control questions are designed to arouse the concerns of innocent subjects, it is expected that innocent subjects will react more strongly to them than to the relevant questions. For example, if the subject were suspected of a theft, a control question might be, "During the first 22 years of your life, did you ever take something that did not belong to you?" Control questions are intentionally vague, cover a long period of the subject's life, and include acts that most individuals have committed but are embarrassed or reluctant to admit during a properly conducted polygraph examination. During the pretest review of the questions to be asked on the test, control questions reintroduced by the polygraph examiner in such a way that the subject will initially or eventually answer "No" to each of them.

Innocent subjects answer the relevant questions truthfully but are likely to be deceptive or uncertain about their truthfulness when answering the control questions. Therefore, innocent subjects are expected to react more strongly to the control questions than to the relevant questions. In contrast, guilty subjects are expected to be concerned about failing the test because their answers to the relevant questions are deceptive, and they are likely to show stronger reactions to the relevant questions.

D. Raskin, C. Honts & J. Kircher, Scientific Status: The Case for Polygraph Tests, 5 Modern

Scientific Evidence § 40:22 (D. Faigman ed. 2012-2013) (hereinafter "Raskin, Honts &

Kircher").

There are two validated approaches to preparation of comparison questions. "Comparison questions can be presented as either a probable lie (PLC) comparison or as a

<sup>&</sup>lt;sup>10</sup> Because such questions do not strictly serve as "controls" recent research and commentary refers to such questions as comparison questions. *Id.*; Honts & Handler at 62-63. These terms are often used interchangeably.

directed lie (DLC) comparison question." Honts & Handler at 62-63. With PLCs, the examinee is maneuvered by the examiner into denying transgressions that may be related to the target conduct being assessed but not the specific target activity. The DLC approach "instructs the subject to lie to questions similar in form to the PLC questions. *Id.; see also* Raskin & Honts at 22. PLC and DLC approaches have been shown through numerous studies to perform with equal efficiency. *See* Honts & Handler at 63; Raskin & Honts at 25-27.

During the examination, a series of tests, asking the same questions but in a different order, are given while his or her physiological responses are recorded.<sup>11</sup> This is to ensure that there are consistent physiological responses to the same questions, thus reducing the potential that outside stimuli influence test results. McCall, *Misconceptions and Reevaluations*, at 71; see also Honts & Handler at 63. Physiological responses are recorded on a moving chart.<sup>12</sup> During the testing, the examiner makes appropriate notation on the chart to indicate where each question is asked and answered and whether there are interfering factors that occurred that may have affected a subject's response to a particular question. *Id.* at 37.

The third phase, test data analysis, is conducted similarly to the evaluation of other scientific tests in medicine and psychology and involves four basic steps: 1) the identification

<sup>&</sup>lt;sup>11</sup> An "acquaintance" test may be administered prior to the actual examination to orient the examinee to the testing procedure. "The acquaintance test gives the examiner a chance to adjust the polygraph instrument to the individual subject's physiology, and it gives the subject a chance to experience, acclimate and habituate to the novelty of having his or her physiology monitored while answering questions." Honts & Handler at 63.

<sup>&</sup>lt;sup>12</sup> While there remains some use of analog polygraph instruments, the trend is that polygraph examinations are conducted with and charted on computers. *See* E. Wilson, *Polygraph in Trade Secret Litigation: Overcoming Misconceptions and Paving the Way for Admissibility*, 10 Computer L. Rev & Tech J. 357, 361 (2006).

of observable or measurable diagnostic information; 2) transformation of diagnostic information to numerical values; 3) comparison of normative data to the diagnostic information; and 4) application of structured decision policies to the comparison results. See, e.g., id. at 74. The premise of numerical scoring models holds that deceptive examinees will exhibit statistically significantly greater responses to relevant questions than to control or comparison questions and that truthful examinees will exhibit statistically significantly greater responses to comparison questions than to relevant questions. Comparison is made between the strength of reaction to relevant questions with the strength of reaction to control questions. I. Swinford, Manually Scoring Polygraph Charts Utilizing the Seven-Position Numerical Analysis Scale at the Department of Defense Polygraph Institute, 28 Polygraph 10 (1999). Deceptive scores will be assigned when physiological responses<sup>13</sup> to relevant question are, on the basis of established statistical parameters, greater than such responses to comparison questions. Conversely, truthful scores will be assigned when differences in physiological responses to comparison questions are with statistical significance greater from those responses to relevant questions. A polygraph test may be interpreted as statistically significant for no

<sup>&</sup>lt;sup>13</sup> Several physiological indicators or features have been consistently demonstrated to be correlated with deception. For respiration, these include sustained decreases in respiration amplitude for three or more respiratory cycles, slowing of respiration rate for three or more cycles, increases in respiratory baseline and apnea. For electrodermal activity, these include increase in skin conductance, increased duration of response and multiple responses. For cardiovascular, these include increases in relative blood pressure, slowing of heart-rate, and decrease in finger-blood volume. J. Kircher & D. Raskin, *Human Versus Computerized Evaluations of Polygraph Data in a Laboratory Setting*, 73 Journal of Applied Psychology 291-302 (1986); V. MacLaren & D. Krapohl, *Objective Assessment of Comparison Question Polygraph*, 32 Polygraph 107-126 (2003).

deception indicated ("NDI"), deception indicated ("DI"), or inconclusive ("IC"). Giannelli & Imwinkelried, *I Scientific Evidence* at 649.

Algorithms have been developed which allow computer-assisted chart interpretation. J. Kircher & D. Raskin, *Computer Methods for the Psychophysiological Detection of Deception*, Handbook of Polygraph 287-326 (Kleiner ed. 2002). Such computer-assisted chart interpretation works both as a diagnostic tool and internal quality control for comparison to examiner-applied scoring. Quality control, in the form of "blind" chart interpretation by a non-examining polygrapher, without knowledge of the original examiner's conclusions, is also often employed. See Giannelli & Imwinkelried, *1 Scientific Evidence* at 649. Such quality control acts as a check and balance against potential examiner bias and/or error and has been observed to increase polygraph accuracy.

#### 2. Scientific Study of the Polygraph

#### a. Scientific Theoretical Basis

As set out in more detail below, there is substantial peer-reviewed scientific literature which demonstrates statically significant, consistent, and measurable differences in physiological reaction to deceptive responses to polygraph test questions through cholinergic and adrenergic response activity in the autonomic nervous system which regulates sweating and electrodermal activity, respiration, and cardiovascular activity. Early polygraph theory explained these measurable changes induced by deceptive responses to polygraph test questions through the fight-or-flight response. Raskin & Honts, at 1. This theory holds that examinees will focus their attention and, as a consequence, their anatomic physiological response to the

question or issue that presents the greatest immediate threat to their survival and well-being. Many recent psychophysiological researchers regard this as an unsatisfactory model and have posited a cognitive behavioral construct to explain these physiological changes. These constructs incorporate cognition and emotion, behavioral/experiential learning, enhanced attention, and information processing as a basis for the physiological response. H. Bracha, et al., *Does "Fight or Flight" Need Updating?*, 45 Psychosomatics 448-449 (2004). *See also* M. Hander, et al., *Bridging Emotion and Cognition, A Role for the Prefrontal Cortex in Polygraph Testing*, 42 Polygraph 1-17 (2013); Raskin & Honts, at 2. This theory suggests that truthtelling presents a simpler and less demanding cognitive and emotional task than deception. Like many observed psychological and medical phenomena, the theoretical explanation of such phenomena should and does evolve as research expands scientific understanding of the field.

The argument that many emotions "generate physiological reactions" [Opening Brief of Petitioner at p.8] misses the theoretical construct of the CQT polygraph. That construct is that there are statistically significant, observable, and measurable physiological changes in physiological activity that are structurally correlated with deception and truth-telling during comparison question testing. The evolution of polygraph testing to the CQT format and the practice requirement that the reactions be consistent over multiple charts of the same questions was in no small part to account for any potential such other physiological changes confound the results of the examination. The scientific research, as set out herein, establishes that the CQT effectively accounts for such factor.

#### b. Scientific Study of Polygraph Validity

The wealth of replicated, peer-reviewed research from several decades of scientific study has shown the validity of the basic assumption that polygraph testing can reliably achieve diagnostic accuracy solidly in the upper 80th to lower 90th percentile. Scientific reviews of peer-reviewed polygraph studies for several decades have borne this out repeatedly. In 1983, 1984, and 2002, three federally-sponsored reviews of the then available scientific literature regarding polygraph were issued. The first was issued by the Office of Technology Assessment of the U.S. Congress. U.S. Congress, Office of Technology Assessment, Scientific Validity of Polygraph Testing: A Research Review and Evaluation, OTA-TM-H-15 (1983) (hereinafter "OTA Report"). The second was issued by the Department of Defense. U.S. Department of Defense, The Accuracy and Utility of Polygraph Testing 2 (1984) (hereinafter "DoD Report"). The third was issued by the National Academy of Science. National Academy of Science, The Polygraph and Lie Detection (2002) (hereinafter "NAS Report"). The most recent published literature review, P. Shaw, et al., Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques, 40 Polygraph 193 (2011) (hereinafter "Meta-Analytic Survey"), was commissioned by the APA to identify and summarize "the present state of existing published scientific evidence of criterion validity" of PDD examination techniques which could provide guidance to polygraph examiners of those techniques which met recently enacted APA standard of practice requirements. Id. at 208. Each of these reviews is considered herein along with additional reviews of some of the more recent scientific literature.

In February 1983, the Committee of Government Operations, U.S. House of Representatives, in response to a Presidential National Security Division Directive ("NSDD- 84") which authorized increased use of polygraph examinations for security screening of federal employees and civilian contractors with access to highly classified information, formally requested the Office of Technology Assessment of the U.S. Congress ("OTA") to conduct a review of the scientific literature on the validity of polygraph testing.

The OTA determined that there were at that time ten field studies<sup>14</sup> and fourteen analog studies<sup>15</sup> on the validity of the CQT which met their scientific criteria. OTA Report at 97. Summarizing their review, the OTA observed that those studies employing the CQT in specific event criminal investigations found average accuracy rates in field studies of 86.3% correct detection of guilty subjects and 76% correct detection of innocent subjects. *Id.* In analog studies, the accuracy was 63.7% correct detection of guilty subjects and 57.9% correct detection of innocent subjects. *Id.* However, these average accuracy results were skewed significantly down as the OTA chose to identify inconclusive findings as errors on the basis that "an inconclusive is an error in the sense that a guilty or innocent person has not been correctly identified." *Id.* The OTA acknowledged that exclusion of inconclusives would raise

<sup>&</sup>lt;sup>14</sup> "Field studies investigate actual polygraph examinations and constitute the most direct evidence for polygraph test validity." OTA Report at 47 (endnote omitted). The primary problem in field studies is establishing ground truth, *i.e.*, objectively determining the actual truth-tellers so they may be compared with the test outcomes.

<sup>&</sup>lt;sup>15</sup> Analog, or laboratory, studies are investigations in which field methods of polygraph examinations are used in simulated situations. OTA Report at 61. Analog studies are typically conducted by having a portion of the subjects commit a mock crime and instructing them to lie about it during the polygraph test. Most crime studies are sometimes criticized for their lack of real-life application. This problem is reduced by offering incentives associated with the outcome of the test. Moreover, establishing the usefulness of scientific evidence is often modeled in laboratory studies.

the overall accuracy rate.<sup>16</sup> *Id.* Had inconclusives been excluded the overall accuracy rate would have been in the middle 80th percentile. The OTA did acknowledge, though critical of its study selection, a then-recent "important review," which found an average field study validity of 97.2% and analog study validity of 93.2%. *Id.* at 41, *citing* N. Ansley, *A Review of the Scientific Literature on the Validity, Reliability and Utility of Polygraph Techniques*, 125 n. 7, Ft. Meade, Md. National Security Agency (1983).

The OTA determined that personnel security screening involved "a different type of polygraph test than specific-incident investigations" and observed that "very little screening research has been conducted" and, for that reason, found that the scientific basis for the use of polygraph for personnel screening was not established. OTA Report at 99-100. The OTA did determine that:

[t]he preponderance of research evidence does indicate that, when the control question technique is used in specific-incident criminal investigations, the polygraph detects deception at a rate better than chance, but with error rates that could be considered significant.

*Id.* at 97. The OTA urged further research and set out priorities for such research. *Id.* at 101-102.

<sup>&</sup>lt;sup>16</sup> While inconclusives may impact the utility of the polygraph, they do not impact accuracy inasmuch as an inconclusive decision would not reflect a bad judgment but, rather, reflects insufficient information to make a decision. As explained in the DoD Report at 61:

Even the most accurate test has diminishing utility as the inconclusive rate increases. Fingerprints, for example, have limited utility in investigations despite their extremely high accuracy because only occasionally can identifiable prints be recovered.

In 1984, at the request of the Deputy Under-Secretary of Defense, the Department of Defense issued a report which surveyed the then-existing scientific literature regarding polygraph testing. DoD Report at 2. Observing that there had been more scientific research conducted on polygraph testing "in the last six years than in the previous 60 years," the authors of the DoD Report included a larger group of studies in its review than did the authors of the OTA Report. *Id.* at 58. Field studies reviewed demonstrated 90% to 100% accurate classification of guilty subjects and 85% to 100% accurate classification of innocent subjects after exclusion of inconclusive results. *Id.* at 37-38. Analog studies were found to

...correctly classify from 75% to 100% of the guilty subjects and from 57% to 100% of the innocent subjects. The mean correct classification rate weighed for number of subjects in the study is 90% for guilty subjects and 80% for innocent subjects.

*Id.* at 62.

Following the OTA Report and DoD Report, there were significant technological advances in polygraph instrumentation and an increase in research in the field of physiological detection of deception and better education and training of examiners:

The period between 1986 and the present has been one of unparalleled advances in the psychophysiological detection of deception testing procedures and processes. . . . More sensitive sensors; more efficient transducers; improved means of digitizing and recording physiological data; digitizing analog data at increasingly high sample rates; and algorithms to evaluate physiological data in an unlimited fashion, all represent technical innovations that will enhance the advancement of the new and evolving science of forensic psychophysiology.

W. Yankee, The Current Status of Research in Forensic Psychophysiology and Its Application

in the Psychophysiological Detection of Deception, 40 J. Forensic Sci. 63, 64 (1995).

In late 2002, the NAS Report was issued. The NAS was commissioned, similar to the

OTA in 1983, to address the use of polygraphs as a screening tool for national security

purposes. Despite finding polygraph to be an "imperfect instrument," and leveling certain criticisms of polygraph use for national security screening, the NAS reported that on the basis of scientific studies selected by NAS as meeting its scientific standards, polygraph accuracy was in the high 80th percentile.

The NAS Report identified 194 separate studies regarding polygraph validity. NAS Report at 107. Of those, the NAS determined that 57 of those studies were of sufficiently high quality for use in its review. *Id.* at 108.<sup>17</sup> Even excluding 137 studies from consideration, consideration of which would have likely increased the overall accuracy of polygraph, NAS found that in analog studies, polygraph accuracy was between 81% and 91% with a median accuracy index of 86%. *Id.* at 122. In the field studies, polygraph accuracy was in the range of 71% to 99%, with a median accuracy index of 89%. *Id.* at 125.

While the NAS committee was critical of some aspects of polygraph, the committee endorsed 57 studies as meeting their criteria for sufficiently high quality of research and that such studies reported accuracy between 81% and 91%. In fact, it is important to note that in the 20 years since the OTA Report, which determined there were then only 24 studies meeting acceptable scientific methodology research, 57 such studies meeting acceptable scientific methodology were identified by NAS. Moreover, the finding of median accuracy of 86% to 89% was statistically similar to the findings of the other reviews of the scientific literature.<sup>18</sup>

<sup>&</sup>lt;sup>17</sup> Of the 57 studies selected, only three were published or reported after the *Pulakis* decision. *See* NAS Report, Appendix G at 335-338.

<sup>&</sup>lt;sup>18</sup> It is also noteworthy that the NAS committee determined that polygraph remains the only viable scientific method for the detection of deception.

In 2011, nine years after publication of the NAS review, the APA published the Meta-Analytic Survey. Therein, Shaw, et al., conducted a literature survey, and 38 scientific studies that satisfied the criteria for inclusion in the survey were identified.<sup>19</sup> The studies involved 295 scorers who provided 11,737 scored results of 3,723 examinations. *Meta-Analytic Survey* at 213. The aggregate decision accuracy across the examinations for event-specific PDD testing and screening, excluding two outliers,<sup>20</sup> was 86.9% and was 89% for event-specific testing only. *Id. See also*, Giannelli & Imwinkelried, *1 Scientific Evidence* at 655.

The importance of the convergence of these surveys' findings regarding polygraph accuracy cannot be overstated. Properly calculating the OTA survey results, which improperly considered inconclusive results as errors, the Office of Technology Assessment, the Department of Defense, the National Academy of Science, and the Meta-Analytic Reviews, found that appropriately conducted, peer-reviewed scientific studies of specific event polygraph testing place its accuracy in the high 80<sup>th</sup> to low 90<sup>th</sup> percentile. Further supporting such results is the statistical consistency found in other reviews of the scientific literature. In a review of four CQT field studies, determined by the authors to meet the criteria for meaningful field studies, the average accuracy of field decisions for the CQT was 90.5%.

<sup>&</sup>lt;sup>19</sup> The criteria for inclusion in the Meta-Analysis was even more restricted than that employed by NAS which, as noted, identified 57 studies meeting its methodological criteria. Additionally, the Meta-Analysis was able to include a number of studies which were published subsequent to the NAS report.

<sup>&</sup>lt;sup>20</sup> The two outliers which reported near-perfect accuracy suffered from "problematic research," and were found to be outside the predicted results by all other studies. *Meta-Analytical Survey* at 248. Including these outliers would have increased the overall accuracy found in the report.

Raskin, Honts & Kircher at § 40:30. Raskin, Honts & Kircher also reviewed eight "high quality" analog studies of the CQT which had been reported between 1978 and 1994. The average accuracy of these CQT analog studies correctly classified approximately 91% of the subjects. *Id.* at § 40:26. In another review, while considering eleven analog studies, S. Abrams, *The Complete Polygraph Handbook* 190-91 (1989), found that, excluding inconclusives, overall accuracy of CQT was "in the range of 87 percent."

As demonstrated above, an argument that "there is no persuasive evidence that the CQT is more accurate than a coin toss" (Opening Brief of Petitioner at p.7) simply fails to confront the current state of psychophysiological detection of deception science.

Comparison of the reliability of polygraph evidence to other scientific evidence is worthwhile. In 1978, one study found that polygraph evidence is more reliable than other evidence traditionally admitted at trial. J. Widacki & F. Horvath, *An Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Common Methods of Criminal Identification*, 23 J. Forensic Sci. 596 (1978). There, eighty volunteer subjects were divided into twenty groups of four. In each group, one was assigned to pick up a parcel from one of two doorkeepers of a building. Each of the twenty subjects brought an information sheet and envelope and left them with the doormen. Each subject signed a form in order to receive the package. The doormen knew in advance that participants would be coming. All eighty subjects were fingerprinted and provided handwriting samples. The doormen were each presented a set of four pictures and were required to select the person from each group who had picked up the package. A handwriting expert sought to identify the handwriting of the perpetrator from each group. A fingerprint expert sought to identify the

perpetrator by lifting fingerprints from the envelopes and forms left with the doormen. A polygraphist examined each set of four subjects and made a decision as to who was the perpetrator.

Widacki & Horvath found that, excluding inconclusives, the fingerprint expert was correct in 100% of his decisions, the polygrapher was correct in 95% of his decisions, the handwriting expert was correct in 94% of his decisions, and the eyewitness was correct in 64% of his decisions. Interestingly, when inconclusives were included, the percentage of correctly resolved cases changed to 90% polygraph, 85% handwriting, 35% eyewitness, and 20% fingerprint.

Similar to the findings of the Widacki & Horvath study, a literature review performed a comparative analysis with regard to the accuracy of polygraph as compared with other medical and psychological diagnostic tools. *See* Crewson, *Comparative Analysis of Polygraph with Other Screening and Diagnostic Tools*, 32 Polygraph 2 (2003) (hereinafter "Crewson, *Comparative Analysis of Polygraph*"). Therein, Crewson found that the polygraph, in specificevent testing, had a similar accuracy to diagnostic radiology and better accuracy than psychological diagnostic tools. *Id.* at 63.

As is apparent from the Widacki & Horvath study and the Crewson review, specificissue polygraph testing demonstrates more accuracy than much other evidence which is routinely admitted in the courts. While opponents of polygraph have singled the polygraph out from other diagnostic tools and evidence and seek to impose standards which are not imposed upon other evidence, as noted by Crewson, "many of these same issues could be raised about medical and psychological diagnostic tools." Crewson, *Comparative Analysis of Polygraph*,

at 68. However, as concluded by Crewson: "The level of accuracy and agreement reported in the polygraph literature is consistent with the medical and psychological literature." *Id.* at 70.

#### **B.** Scientific Study and Consideration of the Argument that Polygraph Evidence Usurps the Jury Function and Confuses the Jury

Empirical research supports the *Scheffer* majority's rejection of the usurpation/confusion argument. See N. Spanos, et al., The Effects of Polygraph Evidence and Evewitness Testimony on the Beliefs and Decisions of Mock Jurors, 12 Imagination, Cognition and Personality 113 (1992-93) ("Although there is no clear, empirically established threshold for prejudicial influence... in the current study this pattern [of prejudicial influence] was not found."); B. Myers & J. Arbuthnot, Polygraph Testimony and Juror Judgments: A Comparison of the Guilty Knowledge Test and the Control Question Test, 27 J. Applied Soc. Psychol. 1421, 1423-25 (1997) (early studies that suggested that juries were heavily influenced by polygraph evidence were poorly constructed and inaccurate, and more recent, better constructed studies find polygraph tests to have little influence on jury decisions); B. Myers, et al., The Court of Public Opinion: Lay Perceptions of Polygraph Testing, 30 L. & Hum. Behav. 509, 516-522 (2006) (study participants who received failed polygraph evidence voted 71.9% to convict, 59.1% voted to convict when they received evidence of a passed polygraph test, and 70.0% in the no polygraph condition voted to convict.). In Shniderman, You Can't Handle the Truth, the author observed: "Jury research conducted over the last thirty years show that jurors do not simply accept experts' opinions, particularly in the case of polygraph evidence." 22 Albany L. J. Sci. & Tech. at 464. See also E. Carlson, et al., The Effect of Lie Detector Evidence on Jury Deliberations: An Empirical Study, 5 J. Pol. Sci. & Admin. 1148 (1977); A. Markwart

& B. Lynch, *The Effect of Polygraph Evidence on Mock Jury Decision-Making*, 7 J. Pol. Sci. & Admin. 324 (1979); R. Peters, *A Survey of Polygraph Evidence in Criminal Trials*, 68 A.B.A. J. 162, 165 (1982); C. Honts & M. Perry, *Polygraph Admissibility: Changes and Challenges*, 16 Law & Hum. Behav. 357, 366 (1992) ("[s]tudies tend to show that juries are more inclined not to give extraordinary weight to polygraph evidence"); McCall, *Misconceptions and Reevaluation*, at 376 ("[t]he continued use of the undue deference rationale for the denial position also demeans the ability of modern juries").

#### C. Scientific Study and Consideration of the Argument that Countermeasures Significantly Degrade Polygraph Accuracy

"Countermeasures are behaviors that an individual may use to attempt to defeat or distort a polygraph test." Raskin & Honts, at § 40:33. Of course, attempts to defeat tests, particularly psychological tests and medical assessments, is not restricted to polygraph. *See* D. Faust, *Coping With Psychiatric and Psychological Testimony* 597 (2012) ("malingering is a central problem in assessing pain-related disability"); M. Jaffe & K. Sharma, *Malingering Uncommon Psychiatric Symptoms Among Defendants Charged Under California's "Three Strikes and You're Out' Law*, 43 Journal of Forensic Sciences 549-555 (1998) (reporting an "epidemic" of malingered uncommon psychiatric symptoms among persons facing long sentences for a third felony). It is not realistic to anticipate that intentional attempts to confound results will not be attempted across the spectrum of forensic testing. No forensic test, including polygraph, can guarantee identification of all efforts to malinger or employ countermeasures. Polygraph, like other forensic testing, has developed strategies for combating this conduct.

#### Polygraph countermeasures

...fall into two major categories, general-state countermeasures that are designed to affect the general mental or physical state of the subject, and specific-point countermeasures that are used to produce physiological changes at specific points during the test. General-state countermeasures include ingestion of drugs, relaxation, and a variety of mental strategies, such as dissociation, self deception, and rationalization. Specific-point countermeasures include physical and mental maneuvers during and following specific questions in order to increase or decrease physiological reactions to those questions.

Raskin & Honts, at 462.

Research and scientific understanding of physiological processes establish that generalstate countermeasures do not result in false-negative (a deceptive person being called nondeceptive) outcomes. Rather, such countermeasure attempt reduces the overall physiological reaction across the question types - resulting in an inconclusive result. This was explained by Honts & Amato, *Countermeasures*, Handbook of Polygraph Testing, 254 (Kleiner ed. 2002) (hereinafter "Honts & Amato"):

A number of General State (GS) countermeasures could be imagined. The most commonly mentioned countermeasure in this category is the use of drugs. Presumably autonomic nervous system inhibitors would reduce a subject's physiological reactivity to test items. Moreover, large doses or powerful drugs might block all phasic autonomic physiological reactivity. However, either case should at worst result in an inconclusive outcome with a CQT, since the CQT requires reaction to either the comparison question or the relevant questions before an opinion can be given.

To employ a successful Specific Point countermeasure for a CQT examination, the examinee would be required to differentiate the comparison question among the question types and, within a narrow window of time in which such physiological reaction is expected following presentation of the question, undertake to produce a larger response to the comparison question. Honts & Amato at 252. Creating well-timed pain or physical movement

upon introduction of a question has been identified as a countermeasure. An attempt at creating the pain or movement must be undetected by the examiner. Examiner observations and potentially video recording of the examination for quality control are a first-line method of detecting such efforts. More recently, the APA has, as of 2012, joined the longstanding federal examiner requirement that movement sensors be included as part of the polygraph data collection phase. D. Krapohl, *Polygraph Principles: A Literature Review*, 42 Polygraph 35-60, 39 (2013) (hereinafter "Krapohl, *Polygraph Principles*").

One study found that subjects who are given information on countermeasures and who are not actually trained in their use are unable to affect significantly the accuracy of the polygraph. *Id.*; L. Rovner, *The Accuracy of Physiological Detection of Deception for Subjects with Prior Knowledge*, 15 Polygraph 1 (1986). One commentator on polygraph testing observed that, given the different test formats, a polygraph subject seeking to employ countermeasures would face a major obstacle of knowing the test format in advance and/or learning to identify each of the formats. As set out in D. Krapohl, *The Polygraph in Personnel Screening*, Handbook of Polygraph Testing, 226-27 (Murray Kleiner ed. 2002).

A countermeasure appropriate against one type of screening format may doom an examinee when used on another format. The selection of an anti-polygraph strategy becomes problematic for the would-be countermeasurer unless the test format were known in advance. Lacking this inside knowledge, the examinee would have to learn to identify all likely test formats, predict the decision criteria, and then successfully employ the correct ensemble of countermeasures without being detected. Such a goal is certainly attainable for some individuals, but it would entail substantially more countermeasure training than if the objective were to defeat a known testing technique.

Oglive & Dutton, Improving the Detection of Physical Countermeasures with Chair Sensors, 37 Polygraph 136-148, 137 (2008) noted that countermeasure research indicates that any potentially successful CQT countermeasure would require "feedback from a polygraph examiner or psychophysiologist while being recorded with a polygraph." While it is, of course, not impossible for such assisted practice to occur, particularly where a government might support attempts to conceal espionage, there is no data to suggest it is a significant confounding phenomena in most routine polygraph environments.<sup>21</sup> Indeed, recent research regarding the effect of attempted countermeasures through use of internet-available countermeasure instruction indicated that deceptive examinees were unsuccessful in employing effective countermeasures. Honts & Alloway, *Information Does Not Affect the Validity of a Comparison Question Test*, 12 Legal & Criminological Psy. 311-312. *See also* Giannelli & Imwinkelried, *I Scientific Evidence* at 655 ("High-level countermeasures are those taught by a trained examiner. ... These are probably very rare in the criminal setting").

It is also noteworthy that Oglive & Dutton's study, *supra*, of the use of movement sensors "significantly improved examiners' performance in the detection of physical countermeasures." 37 Polygraph at 136. See also M. Stephenson & C. Barry, *Use of a Motion* 

<sup>21</sup> Other forensic tests would also be vulnerable to such unethical attempts to coach countermeasures. Indeed, there is little doubt that were a psychologist or other person inclined to coach response to the Minnesota Multiphasic Personality Inventory-2 (M M PI-2) or other psychological and neuropsychological tests, the subject of the test could confound the results. See Brennan, et al, The Vulnerability to Coaching Across Measures of Effort, 23 The Clinical Neuropsychologist 314-328 (2009). Such conduct does not impede the courtroom introduction of such evidence. See Pennuto, Murder and the MMPI-2: The Necessity of Knowledgeable Legal Professionals, 34 Golden Gate U. L. Rev. 349, 366, 375 (2004) (noting that under the Daubert standard the MMPI-2 should fare well and be admissible as evidence" and noting "between 1990 and 2000, ... a total of 816 cases" referenced use of the MMPI.) See also People v. Stoll, 783 P.2d 698, 709 (1989) ("California courts have deferred to a qualified expert's decision to rely on 'standardized' psychological tests such as "the MMPI...").

Chair in the Detection of Physical Countermeasures, 17 Polygraph 21-27 (1988).

# D. Scientific Study and Consideration of the Friendly Polygraph Examiner Hypothesis

It has been argued by critics of polygraph testing that polygraph examinations conducted

under conditions where the examinee faces no adverse consequence for failing tend to produce

false negative results. In support of this argument, a hypothesis posed by Martin Orne which

appeared in a 1973 article in Polygraph is often cited. See M. Orne, Implications of Laboratory

Research for the Detection of Deception, 2 Polygraph 169-199 (1973). Orne's hypothesis was

...based on the idea that the physiological reactions that are essential to diagnosing deception are generated by the fear of detection, or at least fear of some punishment if the deception were detected. Absent this fear, such as testing conducted confidentially of one's defense attorney [a guilty examine] would not produce the requisite physiological reactions and thereby go undetected.

Krapohl, Polygraph Principles at 44.

Empirically, Orne's hypothesis "was based solely on the results of an unrealistic card

test and not a CQT." Raskin & Honts at 478. Krapohl noted as to Orne's hypothesis that:

Even on its face ... Orne's Friendly Polygraph Examiner Hypothesis contains logical errors" as it "assumes that the underlying cause of polygraph reactions is fear, and there is no fear when polygraph examinations are conducted under defense attorney privilege." ... "in contrast to the first assumption regarding the necessity of fear in polygraphy, decision accuracy has been demonstrated in many laboratory settings where the level of fear is far less than field conditions, perhaps even absent. Consequently, the data suggest fear may not be necessary for the polygraph technique to be effective. [Citing M. Handler, et al, *Some Thoughts About Feelings: A Study of the Role of Cognition and Emotion in Polygraph Testing*, 39 Polygraph 139-154 (2010) and Khan, et al, *An Exploration of Emotion and Cognition During Polygraph Testing*, 38 Polygraph 184 - 197 (2009)].

Krapohl, Polygraph Principles at 44.

Raskin & Honts made similar observations, noting research that criminal suspects "have a great deal at stake" as a

...favorable test may help to obtain dismissal or acquittal ... and an unfavorable outcome may result in increased legal costs, personal stress, and disruption of their relationship with their defense counsel. These are far greater motivations than the small amount of money guilty subjects have at stake when they routinely fail laboratory polygraph tests.

Raskin & Honts, at 478. They further observed, consistent with Krapohl's observations, that "fear is not a necessary part of any modern scientific polygraph theory." (Citing Podlesny & Raskin, *Physiological Measures and the Detection of Deception*, 84 Physiological Bull. 783 (1977); *see also J.* Rosenfeld, Alternative Views of Bashore and Rapp's (1993) *Alternatives to Traditional Polygraphy: A Critique*, 117 Psychological Bull. 159 (1995)).

Raskin & Honts also reported on data from their own case work of confidential polygraph examinations for defense attorneys and non-confidential examinations which contradicted the friendly examiner hypothesis and concluded that "[t]he friendly examiner hypothesis fails on all counts" as it "is illogical, unsupported by laboratory studies, and contradicted by data from actual field cases." Raskin & Honts, at 479.

#### E. General Acceptance in the Scientific Community

The Supreme Court in *Daubert* included acceptance within the scientific community as a consideration by which to gauge reliability of scientific evidence. However, the Court specifically held that such acceptance is not a rigid prerequisite to the admissibility of scientific evidence. *See Daubert*, 509 U.S. at 588. This was at least in part a product of the previously observed criticism of *Frye* that often scientific information extends into multiple academic disciplines and sub-disciplines. This has been a confounder in surveying the scientific community on the acceptance of polygraph, as even in the field of psychophysiology only a few will have experience in the sub-specialty of psychophysiological detection of deception. Nevertheless, four surveys have been conducted that speak to acceptance of the polygraph in the scientific community.

The Gallup Organization conducted a survey of randomly selected members of the Society for Psychophysiological Research in 1982. The Gallup Organization, *Survey of Members of the Society for Psychological Research Concerning Their Opinion of Polygraph Test Interpretation*, 13 Polygraph 153 (1984) (hereinafter "Gallup Survey"). In that survey, 61% of the respondents agreed that the polygraph is a useful tool when considered with other available information, 32% of the respondents agreed that the polygraph is not useful at all. Gallup Survey at 157.

A follow-up to the Gallup Survey was conducted in 1993. That survey revealed little change in scientific community attitudes toward the polygraph. There, 60% of respondents agreed that the polygraph is a useful tool, 37% agreed it is of questionable usage, and only 2% believed that it was not useful. S. Amato, *A Survey of Members of The Society for Psychophysiological Research Regarding the Polygraph: Opinions and Implications* (1993) (unpublished Master's thesis, University of North Dakota) (on file with the University of North Dakota Library).

In 1997, a survey was conducted by the Society of Psychophysiological Research and the Fellows of Division 1 of the American Psychological Association. Of those surveyed from the Society of Psychophysiological Research, 36% believed that the control question technique was based on sound scientific theory or principles. Thirty percent (30%) of those responding from the American Psychological Association believed that the control question technique was based on sound scientific theory or principles. W .G. Iacono & D.T. Lykken, *The Validity of the Lie Detector: Two Surveys of Scientific Opinion*, 82 J. of Applied Psychol. 426 (1997).

The most recent survey was conducted in 2002 of both the Society for Psychological Research and the American Psychology Law Society. Of those responding to that survey, 96% of the American Psychology Law Society members and 91% of the Society for Psychological Research members believed that polygraph studies published in peer-reviewed journals are based upon generally accepted scientific methods. Honts, et al., *General Acceptance of the Polygraph by the Scientific Community* (Mar. 9, 2002) (unpublished paper presented at the meetings of the American Psychology Law Society, on file with the author).

Taking these four surveys into consideration, the New Mexico Supreme Court in *Lee v*. *Martinez* found:

...we cannot conclude that the control question polygraph has been generally accepted within the scientific community. However, we also cannot conclude that the control question polygraph has been uniformly rejected by the scientific community. This factor thus carries little weight in our *Alberico/Daubert* analysis of the control question polygraph.

*Lee v. Martinez*, 96 P.3d at 306. Although not definitive of the issue of general acceptance, review of the peer-reviewed scientific studies from the last twenty years shows more to support arguments of polygraph proponents and little for its opponents that, along with the most recent survey data, supports general acceptance of PDD. In any event, acceptance within the scientific community is not, under *Daubert/Coon*, a rigid prerequisite for or against admissibility, and

should likewise not be the controlling issue here.<sup>22</sup>

#### CONCLUSION

It can hardly be debated that a primary goal of the American system of justice is to permit a trier of fact to determine the truth of facts presented and to apply the law to those facts. Trial provides the adversarial forum whereby each party is permitted to present relevant evidence, including expert evidence. Cross-examination provides the opponent an opportunity to test the weight such evidence should be given. Polygraph evidence has often been singled out as evidence to be treated differently and rejected on criticism which could be equally directed to other scientific evidence routinely admitted at trial.

It has been observed by one commentator that "[T]here is only one thing worse than a lie detector that doesn't work, and that's a lie detector that does work." J. Loviglio, *Research Looks Inside Brain to Catch Liars*, Chattanooga Times Free Press, July 1, 2003, at E1 (quoting physicist Robert Park). This sentiment is apparently shared by at least a few courts. *People v. Lyon*, 744 P.2d 231, 238 (Or. 1987) (Linde, J., concurring) ("I doubt that the uneasiness about electrical lie detectors would disappear even if they were refined to place their accuracy beyond question"). While such fears may be a proper subject of political debate, such political issues do not impact the quality of polygraph evidence. Polygraph evidence should be judged on the same basis as any other type of evidence and permitted the opportunity to be considered, in the framework of a *Daubert/Coon* inquiry, and opportunity to establish admissibility.

<sup>&</sup>lt;sup>22</sup> As noted in Wilson, at 278: "it is important to remember that one hundred percent acceptance is not required because experts will disagree."

Here, Judges Miller and Schally, exercising their gatekeeping function and authority as authorized by Alaska law and rule and as directed by this Court held a thorough *Daubert/Coon* hearing and, after careful and meticulous consideration, determined that the evidence of polygraph testing tendered by the Defendants met the appropriate evidentiary standards. The district court's decision is amply supported and was not an abuse of discretion. The check and balance system for admission of expert evidence worked here as it was designed, and it should not be derailed by no longer valid concerns regarding the admission of polygraph evidence.

RESPECTFULLY SUBMITTED this 30th day of September, 2013.

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# CONSENT OF ALASKA COUNSEL

I hereby consent to this motion this <u>30th</u> day of <u>September</u> 2013.

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