



# Never Trust the Polygraph

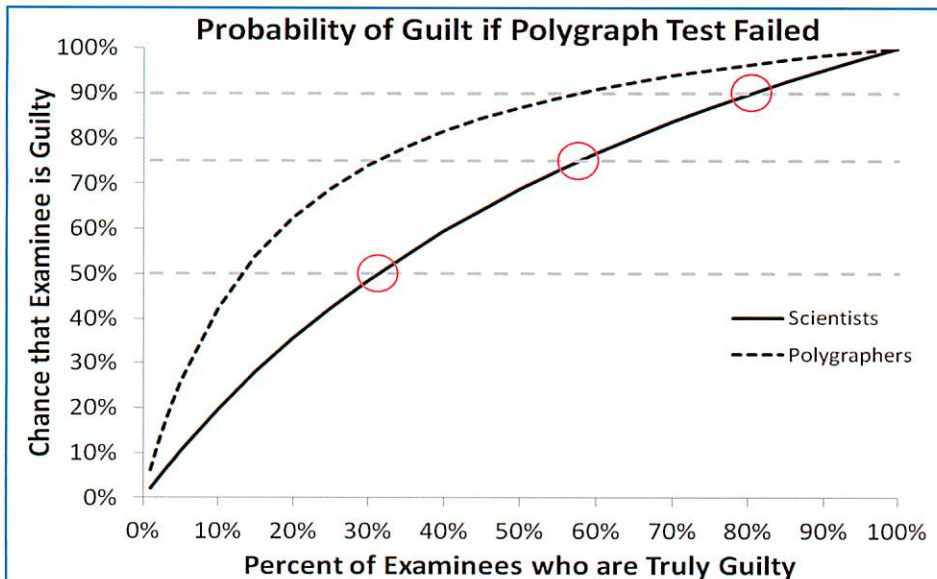
By John J.B. Allen, Ph.D., Distinguished Professor of Psychology, University of Arizona

Editor's Note: This article is abridged with author's permission.

Although polygraph tests are seldom admitted in court, their use influences cases when the results are part of the evaluation process in domains such as child custody, dependency and sexual misconduct. In such cases, the polygraph test may be part of a larger assessment to identify whether a parent poses a significant risk to a child. It is important that these assessments be accurate, as failure to identify a risk endangers children but false identification needlessly damages fundamental relationships. In cases where a parent is deemed to be a risk – correctly or incorrectly – ARS25-403.05 would prohibit awarding that parent legal decision-making, and ARS25-408 (H) (1) can limit the extent and nature of parenting time.

The idea of detecting lies with technology is appealing, perhaps because humans are notoriously poor at detecting deception. (1). Unfortunately, anyone who promises to accurately detect lying ... is lying. Why? There is no unique physiological response(s) associated with lying (2). The polygraph cannot assess lying per se, but instead assesses emotion that can arise when specific questions are asked. As such, a verdict of "guilty" or "lying" from a polygraph is best interpreted as "emotionally aroused" or "anxious." Many innocent individuals are nervous or fearful when a polygrapher asks about sexual misconduct or other behavior that can restrict their parenting time. It is no surprise that the test is highly likely to misidentify innocent people as deceptive, misidentifying 40-50% of innocent individuals as culpable (2, 3) (false positives). Likewise, information about countermeasures is easily obtained (e.g., antipolygraph.org) and can create false negatives among dangerous individuals.

The test referred to as "The Polygraph" uses some variant of the Control Question Technique (CQT). A CQT involves about 10 questions, which fall into two categories. Relevant questions inquire about specific details (e.g., "Did you touch the child between the legs?"). Control questions inquire about questionable behavior but they do not directly accuse (e.g., "Do you find teenage girls attractive?"). Although examinees are not told the distinction between the questions, they are led to believe (falsely) that there are two ways to



**The probability that an examinee is in fact guilty after failing a polygraph test, which depends on what percentage of polygraph examinees are in actually guilty.** The probabilities are shown using the accuracy rates provided by scientific research (solid line) as well as those provided by polygraphers (which are higher due to the inherent selection bias in field studies; dashed line). As shown by the red circles in the figure, the probability that an examinee is in fact guilty after failing the polygraph test is: only 50% when about 31% of examinees are truly guilty; 75% when 58% of examinees are guilty; and 90% when 80% of examinees are guilty. These data illustrate & underscore the key conclusion of the scientific review of the National Research Council that "Almost a century of research in scientific psychology and physiology provides little basis for the expectation that a polygraph test could have extremely high accuracy." (2, p. 2)

fail the test: 1) they can fail the relevant questions, in which case they are guilty; or 2) they can fail the control questions, in which case they appear capable of committing the crime. Thus, it is assumed they will deny both questions, and it is further assumed that for the guilty, relevant questions will be of greater concern and elicit larger physiological responses (a reasonable assumption). It is further assumed (unreasonably) that for innocent, control questions will be of greater concern and thus elicit a larger response than the relevant questions. Examinees that have sufficiently larger responses to relevant questions are deemed deceptive; examinees with larger responses to control questions are deemed innocent. For cases where relevant and control responses are similar, an "indeterminate" outcome is reported, which occurs in 5-20% of examinations.

A comprehensive scientific review by the National Research Council (NRC) of the National Academy of Sciences (2) found that the polygraph test suffers from unacceptably low accuracy. The NRC committee

held public hearings, visited government polygraph facilities, accessed unpublished government reports, including classified material, and produced a comprehensive volume that is available for free at: [www.nap.edu/catalog.php?record\\_id=10420](http://www.nap.edu/catalog.php?record_id=10420). More recently, an ad-hoc committee of the American Polygraph Association published a survey of field polygraph results (4), including more than 45 published samples and 11,000 examinations, and reported overall accuracy of 86.9%, but only after excluding 23.5% of cases with indeterminate verdicts. Unfortunately, more than half the samples came from articles of the lead investigator, and all suffered from the inherent selection bias: to wit, cases selected for inclusion in a field study are biased in favor of demonstrating accuracy because the associated confessions are not independent but a consequence of the polygraph exam. This problem is widely known, and referenced in the executive summary written by this ad-hoc committee of the American Polygraph Association (4).

Continued on Page 18 ...

# In Memoriam



**Carl Hazlett**  
1938-2013



**Elaine C. Hardin**  
1949-2013

## Never Trust the Polygraph

*Continued from Page 15 ...*

Ultimately, judges must decide what, if any, impact the results of a polygraph test merit in legal cases. It is crucial to be aware that a failed polygraph is not certain evidence, or necessarily even suggestive evidence, of guilt. The probability that failing a polygraph test in fact has identified a guilty individual will depend of course on the true positive rate (correctly identifying the guilty) and the true negative rate (correctly identifying the innocent), but also on the prevalence of guilty people among those tested. For example, if rates of actual sexual misconduct are low among cases where such allegations are made, then a failed polygraph test is essentially worthless. A failed polygraph test will almost never indicate a high probability of actual guilt, as far too many innocent people fail the polygraph test. When important issues must be decided, we need highly accurate tools, and the polygraph is not among them.

### Bibliography & References Cited

- 1 Ekman P, O'Sullivan M. Who can catch a liar? *The American psychologist*. 1991 Sep;**46**(9):913-20.
- 2 *The Polygraph and Lie Detection: The National Academies Press*; 2003.
- 3 W.G. I, Patrick CJ. Polygraph ("Lie Detector") Testing: Current Status and Emerging Trends. In: Weiner JB, Hess AK, editors. *The handbook of forensic psychology* (3rd ed). Hoboken, NJ: Wiley; 2006.
- 4 Gougler M, Nelson R, Handler M, Krapohl D, Shaw P, Bierman L. Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques. *Polygraph*. 2011;**40**(4):194-305.

### Want to get more involved with PCBA?

*You can!* There are several committees that rely upon the participation of PCBA members.

For more details, contact Susan Trentham at [trentham@pimacountybar.org](mailto:trentham@pimacountybar.org).

### Transamerica Building

177 North Church Avenue

300 RSF to 3,000 SF

Close to courts, financial district, restaurants and government offices.

Contact:

**Jill Hansen** or **Crystal McGuire**  
954-2300 400-1515

### Become An Attorney Member of PCBA's QUILT Program (Qualified-Income Legal Team)!

The Program assists low- to middle-income groups who are "too rich" for free legal services & "too poor" to afford regular attorney fees.

Attorneys can assist with:

- (1) Divorce
- (2) General Civil Litigation
- (3) DUI
- (4) Landlord/Tenant
- (5) Foreclosure
- (6) Guardianship
- (7) Criminal Misdemeanors.

For details, contact our  
Lawyer Referral Service at 623-4625  
or visit [www.pimacountybar.org](http://www.pimacountybar.org).