

Polygraph Basics

POST-CONVICTION SEX OFFENDER TESTING

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Introduction to Sex Offender Management

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Outline

- Basic Polygraph
- Test Theory
- Polygraph Accuracy
- Countermeasures
- Post Conviction Sex Offender Testing
- Suitability and Special Populations
- PCSTOT Question Targets

Introduction to the Polygraph

"I don't know anything about polygraphs, and I don't know how accurate they are, but I know they'll scare the hell out of people."

- president Richard M. Nixon

Who Uses Polygraph Tests

- Government/Military Security Agencies
- Law Enforcement Investigators
- PCSOT programs
- Reality Television
- Tournaments – Fishing / Body Building
- Cheating Spouses

Employee Polygraph Protection Act (1988)

- Prohibits polygraph testing of employees as a condition of employment
 - Pre-employment
 - Periodic
- Response to un-regulated, un-standardized and abusive practices
- Excepted Industries
 - Nuclear energy
 - Water
 - Pharmaceutical employees
 - Armed security
 - Government employees

Polygraph Theory

- Predictable response in autonomic functions occur when an examinee responds to test stimuli (questions) in a deceptive or truthful manner
- Reactions to test stimuli can be measured normed for distinct distributions of truthful and deceptive examinees
- Individual examinees' test data can be evaluated for concurrence with decision thresholds for assignment to deceptive or truthful groups

Polygraph Components

- **Pneumograph assembly**
 - Respiration patterns and changes
- **Blood pressure cuff**
 - Changes in blood pressure (cardiovascular activity)
- **Electrodermal sensors**
 - Skin conductance (not resistance)
- **Behavior Monitors**
 - Alert examiner about efforts to self-regulate or falsify reactions

Dispelling Misinformation

Contrary to popular belief, the polygraph does NOT measure any of the following

- Deep Breathing
- Sweaty Palms
- Rapid Heartbeat
- Nervousness
- Stress
- Anxiety
- Fear
- Emotional Reactivity
- Subconscious attitudes
- Beliefs
- Forgotten memories

Fight, Flight, Freeze

(Cannon, 1927)

- Massive, diffuse, and global (non-specific) adrenal and endocrine activation during emergency states
- Brain does not distinguish between physical and psychological danger
- Epinephrine and norepinephrine (adrenaline and noradrenaline)
 - Sometimes act as neurotransmitters in the brain
 - In fight or flight they activate endocrine, circulatory, muscular, and digestive systems
- Cortisol (secreted by adrenal glands)
- Endocrine activation

Whats' Wrong with FFF

- Cannot account for why the polygraph works with DLCs
- Depends on fear as the only psychophysiological mechanism
 - Assumptions about fear prompt aggression and abusive treatment by examiners
- Cannot account for polygraph accuracy with psychopaths

Psychological Basis

“The idea that fear or arousal is closely associated with deception provides the broad underlying rationale for the relevant-irrelevant test format. Subsequent research has confirmed that the polygraph instrument measures physiological reactions that may be associated with an examinee’s stress, fear, guilt, anger, excitement, or anxiety about detection or with an examinee’s orienting response to information that is especially relevant to some forbidden act.”

National Academy of Sciences (2003)

Psychological Constructs

- Emotion: fear, anxiety, stress, guilty, anger, excitement, nervousness
 - Do not attempt to define the emotion when we do not know
- Cognition: pre-frontal cortex
 - Orienting response
 - Complexity
 - Novelty
- Behavioral Learning: conditioned response
 - Involvement in a behavior or event become a form of single-trial classical conditioning

Psychophysiology

- The study of physiological reactions to psychological stimuli
- Measurement and statistical inference based on physiological responses to information or question stimuli

Forensic Psychophysiology

- The study of physiological reactions which occur in response to acts of deception
- Field polygraphy
 - Information based test
 - Criminal investigation
 - CIT/GKT
 - CQT
 - Source/Informant testing
 - Non-information based test
 - CQT
 - Screening test (no known incident/allegation)

Field Polygraph Goals

1. Requirements for polygraph testing will yield a greater volume of information that is useful to the challenges of risk assessment and risk management
2. Requirements for polygraph testing will serve to deter some problem behavior from occurring
3. Requirements for polygraph testing will serve to motivate improved compliance with rules and expectations

Polygraph Program Goals

Incremental Validity – polygraph is a **decision support tool** to assist professionals in making more accurate decisions by accessing additional information

- **Detection**: improved judgement surrounding an individual's behavior
- **Disclosure**: access to more information than would be disclosed without requirement for polygraph testing
- **Deterrence**: improved rule-compliance and deterrence of some problem behavior

Polygraph Test Procedures

- Pretest Phase – longest part
- In-test Phase – actual testing
- Post-test Phase – resolve any remaining inconsistencies

Pretest Phase

- Introduction and Authorization
 - Voluntary testing
 - Dissemination or privilege of information
- Biographical and medical background
- Explanation of polygraph components and psychophysiological mechanisms
- Structured Interview (case facts)
- Formulate in-test questions and answers

In-test Phase

- Attach polygraph components
- Conduct an orientation/sensitivity test
- Run the test 3 to 5 times
- Review charts for initial results

Post-test Phase

- Brief review of the initial test results
- Examinee is given the opportunity to explain any reactions or inconsistencies
- Can become a form of interrogation
 - Examiner will confront the examinee's deception
 - Obtain further information and explanation
 - Examiner may encourage the use of rationalization and externalization in attempt to make a confession possible

In Test - Questions

- All test formats include 8 to 12 questions
- Examinee must “pass” all test questions
 - Polygraph cannot simultaneously determine truth and deception
- Two to four target issues for comparison and scoring
- Personally relevant questions regarding honesty and integrity
- Known truth questions for baseline
- Other (procedural) questions to conduct the test and condition the examinee

Question Formulation

- Describes the *examinee's behavior*
 - Time delimited (date or time-frame)
 - Simple (yes/no) direct and easily understood
- Does not presuppose guilt or deception
 - Avoid legal terms and treatment jargon
 - Avoid mental state or motivational terminology

Questions

- On or about that date, did you do it?
- On or about that date, did you do it at that location?
- (Do you know for sure, who did it on or about that date)?

- *On or about January 1, 2006, did you take those four missing diamonds?*
- *On or about January 1, 2006, did you take those four diamonds from the Zales Jewellers?*
- *Do you know for sure who took those four diamonds from Zales on or about January 1, 2006?*

Non-testable Issues

- Intent
- Fantasy (not connected with behavior)
- Thoughts
- Beliefs
- State of mind
- Future behavior
- Other individual's behavior

Questionable Questions

- Do you still beat your children?
- Are you now or have you ever been...
- Did you deliberately strike your wife?
- Are you planning to harm that child?
- Did you illegally take that money?
- Did you mean to keep that money?
- Did you knowingly steal that car?
- Did you intentionally harm your wife?
- Did you burglarize that store?
- Did you rape that woman
- Did that man touch your private parts?

Confirmatory Questions

- “Yes” answered questions are not strictly prohibited by DoD
 - “Source” or “Informant” testing
 - Used alongside other “No” answered Qs
 - Challenge or refute the veracity of information
- Should not be allowed in PCSOT
- Victim testing (verification) is unethical

Conditioned response theory does not support the idea that “Yes” answered confirmatory questions should work

Linguistics - Behavior

- Human behavior is not defined by intent but by the event
 - Hitting
 - Falling

Sexual contact and Lying are among the exceptions to this rule

- *Lying = attempting to deceive*
- *Sexual contact = touching private parts for sexual arousal*

Polygraph Examination Results

- **No Significant Reactions**
(No Deception Indicated)
- **Significant Reactions**
(Deception Indicated)
- **No opinion**
(Inconclusive)
- **Purposeful Non-Cooperation**
(Intentional Distortion)

Examinees must “pass” all test questions to achieve a completely resolved test result

No Significant Reactions

- *No Deception Indicated*
- Chart data are stable and interpretable, without excessive artifacts or distortion
- Numerical scores meet the decision threshold for the statistically significant **absence** of physiological responses correlated with deception

Significant Reactions

- *Deception Indicated*
- Chart data are stable and interpretable according to established scoring criteria
- Numerical scores meet the decision threshold for the statistically significant presence of physiological responses correlated with deception

No Opinion

- *Inconclusive*
- Numerical scores did not meet decision thresholds for either deception or truthfulness
- Un-interpretable data (dampened, exaggerated, erratic, or inconsistent)
- Examinee showed significant reactions to other question/s during a mixed-issue test

Formulation and rendering of professional opinion about truthfulness or deception is not possible

Purposeful Non-Cooperation

- *Intentional Distortion*
- Examinee was observed to make deliberate attempts to alter the test result
- Includes both naïve and practised countermeasure attempts
- Without admission of non-cooperation the examiner may attempt to score the test data to a deceptive conclusion
- Non-cooperation has been shown to be correlated with confirmed deception

Mixed Results

Cannot render opinions with mixed deceptive and non-deceptive results

– ***Single Issue Tests***

- Inconceivable to lie to some questions while being truthful to others
- Either deceptive or truthful to all

– ***Mixed Issues Tests***

- Possible to lie to some questions while being truthful to others
- Results can be deceptive and inconclusive
- Results can be non-deceptive and inconclusive

Computerized Scoring Systems

- Newest computer scoring algorithm will outperform 9 out of 10 humans on blind scoring tasks
 - Designed and validated with for mixed-issue screening polygraphs
 - Suitable for quality assurance
 - Cannot score data of substandard or uninterpretable quality
 - Require examiner review of all data
- Examiner must render the final decision

Original examiner's hand scored results have generally outperformed both computer scoring algorithms and blind review scores

Test Theory

*“There are in fact two things, science and opinion;
the former begets knowledge, the latter ignorance.”*

Hippocrates (460 BC - 377 BC)

Validity and Reliability

- **Reliability = tests cannot be valid if the results are not reproducible**
 - Test-retest reliability (Alpha)
 - Interrater reliability (Kappa)
- **Validity = accuracy of assumptions**
 - **Face Validity** – opinion or consensus of experts
 - **Content Validity** – selection of pertinent issues of inquiry
 - **Predictive Validity** – ability to predict a future outcome
 - **Concurrent Validity** – ability to identify what is already known
 - **Construct Validity** – definition of meaningful relationships (correlations) between various phenomena
 - **Convergent / Divergent Validity** – knew information does or does not coincide with extant knowledge
 - **Incremental Validity** – professional decision accuracy improves with the use of additional information

Test Theory

- All tests are math tests - all test results are simplified probability statements
- There is no such thing as a perfect test
- Test developers purposely bias tests to exploit their imperfections
- The empirically and ethically sound use of use of tests depends in part upon our understanding of the empirical meaning of test results

Test Results

- Positive (significant reactions / deception indicated)
- Negative (no significant reactions / no deception indicated)
- Not Sure (inconclusive / no opinion)

Value judgments such as “pass” and “fail” or “good” and “bad” are imposed situationally

- *HIV*
- *Pregnancy*

Test Accuracy

Always a feature of three variables

- Validity
 - Criterion validity
 - Construct validity
 - Reliability
- Decision Threshold
 - How much is too much?
 - As much a ***policy*** concern as an ***empirical*** concern
- *A priori* base-rate
 - external probability of involvement

Test Errors

- False Negative Error
 - Test fails to find the issue of concern
 - Criterion Validity or Construct Validity Error
- False Positive Error
 - Test reports a problem where there is not
 - Threshold Error – increases with lower decision thresholds
- Inconclusive Results are not errors
 - INC Protects against decision errors

Sensitivity and Specificity

Sensitivity

- Ability to detect the issue of concern
- Influenced by decision threshold
- Greater sensitivity = greater detection rate
- Can be increased at a cost of more false-positive results
- Governs the NPV (and FPI) and the ability to rule out a diagnosis

Specificity

- Ability to reject cases that do not express a specific issue
- Influenced by construct validity
- Can be increased at a cost of more false negatives
- Governs the PPV (and FNI) ability to establish a basis for action

Single and Mixed Issue Tests

- **SINGLE ISSUE TEST**

- Inconceivable for a subject to lie to one question while telling the truth to another
- Alpha (internal consistency) is assumed to be 1 (100)
- Greater **Specificity** and **Diagnostic Accuracy**

- **MIXED ISSUES TEST**

- Conceivable for a subject to lie to one or more questions while being truthful to another
- Alpha is assumed to be 0 (zero)
- Greater **Sensitivity** and **Incremental Validity**

Screening and Diagnostic Tests

Diagnostic Test

- ***Known incident (specific allegation)***
- Single behavior or issue
- Reason to suspect involvement
- Specific date, time, location
- Often costly and invasive
- Biased for **specificity**
 - minimize false positives
- Negative result is not always conclusive
- **Positive result is a basis for action**

Screening Test

- ***No known Incident (no allegation)***
- Mixed or single issues
- No evidence to suggest involvement
- Broad time-frame
- Cost-effective and efficient
- Biased for **sensitivity**
 - minimize false negatives
- Positive results require continued investigation
- **Negative result is conclusive**

Screening and Diagnostic Test Results

Screening Test

- Negative / Pass
 - Done
- Not Done Yet
 - Positive / fail
 - Inconclusive
 - Further investigation
 - Further screening or diagnostic testing

Diagnostic Test

- Negative / Pass
 - Done
- Not sure
 - Not done
- Positive / Fail
 - May become a basis for action

(Krapohl & Stern, 2003)

Test Results

Diagnostic Tests

- DI = Deception Indicated
- NDI = No Deception Indicated
- INC/NO = Inconclusive or No Opinion

Positive results require action

Screening Tests (PCSOT)

- SR = Significant Reactions
- NSR = No Significant Reactions
- INC/NO = Inconclusive

Negative result = done
Positive results = need more information

Inconclusive and No-Opinion

- Synonymous terms
- No opinion came into use only to clarify the meaning of “inconclusive”
- No scientific basis for differential meaning
- Unethical to provide a personal opinion when a professional (scientific) opinion is not possible
- Expert opinions in science are called “un-tested hypothesis”
 - Often found to be no more accurate than non-expert opinions
 - Expert opinions are useful to courts (not scientists)

Screening Polygraphs

PCSOT

- Post-conviction risk assessment (sex history)
- Monitor compliance with treatment and supervision rules
- Deter non-compliance

National Security

- Pre-employment / pre-clearance background check (risk assessment)
- Monitor compliance with security policies
- Deter non-compliance

Police Applicant

- Pre-employment / background screening (risk assessment)
- Deter unsuitable applicants

Test Theory

- All Tests are Math tests
- Tests of abnormal phenomena are subject to simple interpretation rules (binary = 1 or 0)
 - Gonorrhoea
 - Cancer
- Some tests are threshold tests
 - HIV / AIDS
 - Cholesterol
- Tests of normal phenomena require aggregated correlations to become diagnostic
 - Fever
 - Elevated white-cell counts
 - Pain on lower-right abdomen

Successive Hurdles (medical model)

- **Mixed issue screening tests**
 - Decision rules optimized for **sensitivity**
 - minimize false negative errors
 - Negative results are conclusive
 - Positive or unresolved results require further investigation
- **Single-issue diagnostic tests**
 - Decision rules optimized for **specificity**
 - minimize false positive errors
 - Positive results are a basis for action
 - Multiple positive test results are often required

Test Theory – Take Home Points

- All tests are either diagnostic or screening tests
 - Diagnostic tests require a known incident or allegation and reason to suspect involvement
 - In medical science, multiple positive tests are often required to formulate a basis for action
- All tests are biased (either for sensitivity or specificity)
- All test results are simplified probability statements
- Test results are either positive, negative, or not sure
- Test results are meaningful when compared with norms
- Tests don't make decisions – they give information

Polygraph Accuracy

"There are three types of lies - lies, damn lies, and statistics."

- Variousy attributed to Benjamin Disraeli, Alfred Marshall, Mark Twain, and other dead people.

Accuracy National Academy of Sciences (2003)

“... we conclude that in populations of examinees such as those represented in the polygraph literature... specific-incident polygraph tests for event-specific investigations can discriminate lying from truth-telling at rates well above chance, though well below perfection.”

(National Academy of Sciences, 2003) [p.214]

Accuracy - Criterion Validity (National Academy of Sciences, 2003)

- Reviewed 66 laboratory and field studies
- Laboratory Studies
 - ROC A Value = .70 to .99
 - Median = .8
- Field Studies
 - A = .71 to .99
 - Median = .89

Polygraph and Other Tests

- Screening and Diagnostic tests were compared for Polygraph, Medical, and Psychological tests (Crewson, 2003)

– Overall Kappa for <u>Poly.</u> , <u>Med.</u> , and <u>Psych</u>	.77	.56	and	.79
– Overall screening sensitivity levels were	.59	.79	and	.74
– Overall screening specificity levels were	.90	.94	and	.78
– Overall diagnostic sensitivity levels were	.92	.83	and	.72
– Overall diagnostic specificity levels were	.83	.88	and	.67

Polygraph validity and reliability studies suggest that polygraph accuracy is consistent with achievements in other developed fields of scientific testing

Accuracy - Motivation

- External motivation is positively associated with polygraph accuracy in comparison question and concealed information (Kircher et al. 1988; Ben-Shakhar and Elaad, 2003)
- Research in Colorado Dept. of Corrections indicates staff attitudes (endorsement and requirements) affect test outcomes
- *field experience indicates that external motivation is associated with improved polygraph outcomes (i.e., more subjects tell the truth and pass)*

What factors limit accuracy

- Suitability for testing
 - Mental health (reality contact)
 - level of functioning (mental retardation)
 - Physical health (cardiovascular, neurological)
- Random measurement error
 - All test results are simplified probability statements (Senter, Krapohl & Dollins 2005)
- Target selection
 - Testability (signal value) of the issue
- Question formulation
 - Clarity of language
 - Clarity of logic

Estimated Inconclusive Rates - mixed issues (multi-facet) tests

- Estimated as the inverse of the resolution rate raised to the exponent of the number of distinct target issues
- EXAMPLE: $INC_M = 1 - (1 - INC)^Q$
 - INC_M = inconclusive rate for mixed-issue tests
 - INC = expected inconclusive rate for single issue tests
 - Q = number of distinct target issues

Rate	Inverse	2 Quest	3 Quest	4 Quest
2.5 %	$1 - .025 = .975$	$1 - .975^2 = .05$	$1 - .975^3 = .07$	$1 - .975^4 = .10$
5.0%	$1 - .05 = .95$	$1 - .95^2 = .10$	$1 - .95^3 = .14$	$1 - .95^4 = .19$
10.0%	$1 - .1 = .9$	$1 - .9^2 = .19$	$1 - .9^3 = .27$	$1 - .9^4 = .34$

Inconclusive results are not errors, but protect from errors

Accuracy – Take Home Points

- The polygraph test is very good though imperfect test
- There is no such thing as a perfect test
- The polygraph appears to be offer accuracy rates comparable to other good medical and psychological tests
- Inconclusive test results are not errors – they reduce test decision errors
- Inconclusive rates may vary with the breadth of the test and number of distinct targets

Suitability for Polygraph Testing

Endogenous Factors

- Polygraph research suggest that test validity is seriously compromised by mental retardation, psychosis, and immaturity
 - FAE < 12 years
 - IQ < 70
 - Lack of reality contact (psychotic condition)

Why Age 12?

- Ceci, Toglia & Ross (1987) Haugaard, Repucci, Laird, & Nauful (1991) found children determine that saying something untrue to a police officer was lying, even when instructed by parents to make such statements
- Abrams (1975, 1989), found children under age 11 do not make good polygraph subjects
 - Other studies report similar findings
- Abrams (1974) reported unreliable results with adults of below borderline intelligence
 - Adults with IQ scores of 70 have FAE/SAS scores of 12 years
- Executive functioning abilities (prefrontal cortex) begin to fully mature at age 12 (Anderson, 1998; Welsh, Pennington, and Groisser 1991)

Suitability for Polygraph Testing

- Chronological Age of at least 14 years
 - 12-13 year old youths may also be tested
- Functional Age Equivalency (FAE) or Standard Age Score (SAS) of at least 12 years
 - Functional maturity more important than age
- Capacity for abstract thinking
- Capacity for insight
- Capacity to understand right from wrong
- Ability to tell truth from lies
- Ability to anticipate rewards and consequences for behavior
- Consistent orientation to date, time, place

Un-Suitability for Polygraph Testing

- Diagnosis of psychotic condition (DSM IV-TR), serious mental disorder, psychiatric disorganization/disorientation, or lack of contact with reality (Abrams, 1973, 1974; Flock, 1950; Heckel, Brokaw, Salzberg & Wiggins, 1962)
- DSM IV-TR Axis I severity specifier of “severe” for any diagnosis
- DSM IV-TR Axis V Current Global Assessment of Functioning (GAF) of 55 or lower (serious or profound functional difficulties)
- Presence of acute pain or illness
- Presence of acute distress
- Recent medication changes
- Mean Age Equivalency (MAE) or Standard Age Score (SAS) under 12 years

Personality

“We have not seen persuasive scientific arguments that any specific personality variable would influence polygraph accuracy. If such effects were found to exist, however, it would be possible in principle to use information on the personality variable to adjust polygraph test scores.” [p.86]

(National Academy of Sciences, 2003)

Psychopathy

- Contrary to popular myths PSYCHOPATHS CANNOT BEAT THE POLYGRAPH TEST
- Numerous studies since 1973 have demonstrated the polygraph to be accurate at detecting deception among known psychopaths
- There is no theoretical rationale explaining why psychopaths could beat the polygraph test

Raskin and Hare (1978)

Observe zero (0) false-negative errors in their studies on polygraph testing of known psychopaths

Psychopaths – polygraph fiction

To suggest psychopaths can learn to control their autonomic nervous system or accurately mimic ANS responses through PNS activity is to perpetuate the MYTH OF THE OMNIPOTENT PSYCHOPATH

- Psychopaths are non-psychotic persons who do not lack contact with reality
- Psychopaths DO NOT believe their own lies
- To believe one's lies would require a break with reality contact (psychoticism)

Psychopaths – polygraph fact

- Physically healthy psychopaths have the same ANS response patterns as non-psychopaths
 - Researchers have failed to find meaningful physiological differences between psychopaths non-psychopath
- Psychopaths have the same neuropsychological functions as non-psychopaths
 - Researchers have failed to find meaningful neuropsychological differenced between psychopaths and non-psychopaths

Psychopathy – NAS (2003)

“Regarding psychopathy, Hammond (1980) found no differences in the detectability of deception using a mock crime scenario among normal individuals, alcoholics, and psychopaths. Similarly, neither Raskin and Hare (1978) nor Patrick and Iacono (1989) found any differences in the detectability of deception between psychopathic and non-psychopathic prison inmates.” [p.136]

(National Academy of Sciences, 2003)

Psychopaths and Deception

- Psychopaths know when they are lying
- Psychopaths know why they lie
 - Lie to achieve goals (take advantage of others)
 - Lie to avoid consequences
 - Lie for fun (self-aggrandizement)
- Psychopaths can be very good liars
- Psychopaths can be very bad liars
 - Lie when faced with evidence
 - Lie when caught red-handed
 - Lie when it would make more sense to tell the truth
- Psychopaths are persistent liars

Medications

- Side Effects
 - Drowsiness
 - Irritability
 - Decreased libido
- Data Quality Effects
 - Dampening of physiological response data
 - Exaggeration of physiological response data
 - Unpredictable effects
- Physiological Side-Effects
 - ***Sympathomimetic*** effects
 - ***Anti-cholinergic*** effects
 - ***Corticosteroid*** effects (asthma inhalers)
 - ***Extrapyramidal*** effects
 - ***Postural Hypotension effects***

Marginal Subjects

- Any test subject who requires multiple prescription medications to get through a school day or work day is arguable not functioning within normal limits
- Consider reporting test results as “qualified” for marginal subjects
- Polygraph testing should continue if there are anticipated program benefits
 - Disclosure
 - Deterrence
 - Detection / Decision-support

Marginal Subjects - Caution

Upon completion of the pretest interview, this examiner determined <>N to be marginally suitable for the polygraph technique, due to his reported use of multiple prescription medications at the time of this examination. While there is no published research or theoretical rationale suggesting that any medications would cause erroneous polygraph examination results, some medications have been shown to affect sympathetic nervous system responses recorded by the polygraph instrument. Clinical commonsense suggests that persons who function optimally while taking prescription medications might also produce polygraph test data of optimal interpretable quality while taking any necessary and properly administered medications. There is no way to predict the exact effects of medications for any individual, and medication effects will vary with the types and numbers of medication, dosages, length of time on medications, in addition to individual physiology. Ethical empirical practices dictate that the application of normative data and normative interpretive thresholds to exceptional individuals (i.e., persons whose functional characteristics are outside the normal distribution of persons in the intended sample or population) should always be regarded with caution. Accordingly, <>N's test results should be viewed as qualified.

Marginal Subjects - Data

Careful inspection of <>N's polygraph examination record revealed test data of marginal interpretable quality, with erratic and inconsistent responses throughout the examination. Despite the loss of some interpretable test data, a standard numerical evaluation was completed in attempt to render a qualified opinion using remaining data that was sufficiently free of artifacts and distorted segments.

Careful inspection of <>N's polygraph examination record revealed moderate/substantial dampening of physiological responses throughout the examination. Despite the loss of some interpretable test data, a standard numerical evaluation was completed in attempt to render a qualified opinion using remaining data that was sufficiently free of artifacts and distorted segments.

- Careful inspection of <>N's polygraph examination record revealed test data of adequate interpretable quality that was sufficiently free of artifacts and distorted segments to complete a standard numerical evaluation of these test results.

Medications – Take Home Points

- Use of medications is common – single medications indicate no concern to the polygraph
- Persons who function optimally on meds will likely test optimally on meds
- No published research or theoretical rationale suggests any medications will cause erroneous polygraph results
- Data quality problems may cause inconclusive results
- Use caution when interpreting test results for persons taking multiple medications
- Use caution when responding to test results for any person who meet legal criterion for an exceptionality
 - Diagnosed disability, 504, ADA, IDEA/IDEIA

Suitability – Take Home Points

- There is no single test that will work equally well with everyone
- Polygraph depends upon a psychologically normal (non-psychotic) person in reasonable physical health
- Normative data and normative decision models apply to normal persons from the intended (researched) sample or population
- Examiners should not issue unqualified opinions on marginal test data from marginally suitable subjects
- Examiners should alert referring agents to issues indicating marginal suitability or unsuitability for polygraph testing
- There may be benefits from conducting polygraphs on marginal test candidates
 - Disclosure value
 - Deterrent value
 - Decision support value
- No theoretical rationale to suggest erroneous results
- Professional ethics dictates view results with caution