KPA '09 Countermeasures What every examiner should know.

Special thanks to Dr. Charles Honts, **Department of Psychology Boise State** University, Raymond Nelson of Lafayette Instrument Company, Lt. Walt Goodson of the Texas D.P.S. Polygraph School and Mr. Chuck Slupski of the American International Institute of Polygraph for their contributions to this presentation.

Polygraph Countermeasures

What must a countermeasure do to beat:

- A CQT: The countermeasure must reverse the differential reactivity between relevant and control questions so that the comparison questions now evoke stronger physiological responses than do the relevant questions to which the subject is attempting deception.
- A CKT: The countermeasure must alter the subject's physiological responding so that the Keys consistently produce smaller physiological response than at least one of the Foils.
- For both tests, the countermeasure must be applied in a way that is not detectable by the examiner, either through an observation of the subject or the physiological data.

Polygraph Countermeasures

 Definition: Anything that a polygraph subject does in an effort to defeat, or distort the result of, a polygraph examination.

- General State Countermeasures
- Spontaneous Countermeasures
- Specific Point Countermeasures
- Information

General State Countermeasures

 The General State Countermeasures (GSC) include anything that a subject might do to affect him- or herself throughout the entire test. They include:

- Drugs
- Fatigue
- Anti-perspirant applied to the fingers

 None of the GSCs are likely to be effective against the CQT, although they might be effective against the CKT.

Mental Countermeasures Can be General State CMs

- Include hypnosis, rationalization, mental exercises and dissociation.
- Hypnosis
 - Attempts to create amnesia
- Rationalization
 - Self justification to reduce responses
- Dissociation
 - Mentally isolated from consciousness

Drugs

 Although one poorly designed study found a CM effect for meprobamate on the CKT, other research has shown the the following as ineffective against the CKT:

- Diazepam
- Meprobamate
- Ritalin
- Propranolol
- Alcohol

Drug CM studies with the CQT show no effects for:

- Meprobamate
- Propranolol (improved true negatives in Gatchel et al 1984)
- Alcohol

Spontaneous Countermeasures

 Definition- Spontaneous CMs are attempts at influencing examination outcome that are conducted without apparent forethought or planning.

Limited field data on Spontaneous CMs

Honts and colleagues have examined these in the lab setting.

Examples of Spontaneous Countermeasures

 Honts, Raskin, Kircher & Hodes, 1988 reported the following spontaneous countermeasures:
 Mental Countermeasures

- Relaxation
- Disassociation
- Self-deception
- Imagery

- Rationalization
- **Physical Countermeasures**
 - Attempts to Control Breathing
 - Biting Tongue
 - Attempts to Control Heart Rate
 - Attempts to Control Physiology
 - Pressing the Toes to the Floor

Spontaneous Countermeasures (continued)

- Honts, Raskin, Kircher & Hodes, 1988 examined the debriefings of subjects from three laboratory studies of the CQT. They found:
 - 60% of the guilty subjects attempted one or more countermeasures
 - None of their innocent subjects reported countermeasures

Spontaneous Countermeasures (continued)

- Otter-Henderson, Honts, & Amato, (2002). Examined the occurrence of spontaneous counter-measures against the RI in an employment screening study. They reported the following:
 - 77.5% of the Guilty subjects attempted one or more countermeasures
 - 30% of the Innocent subjects attempted one or more countermeasures
 - Spontaneous countermeasure use produced no effects of on the physiological data collected
 - In order of frequency (most to least) the following countermeasures were reported:
 - Altered Breathing

- Mental countermeasures
- Physical countermeasures

Spontaneous Countermeasures (continued)

 Honts, C. R., Amato, S. & Gordon, A. K. (2001), Polygraph, 30, 1-9, looked for the effects of spontaneous countermeasure by subjects in a large laboratory study of the CQT. They reported: 89.6% of the guilty subjects reported the use of one or more countermeasures • 45.8% of the innocent subjects reported the use of one or more countermeasures.

Frequency and type of Spontaneous Countermeasure Attempts.

Honts, et al., reported the following countermeasure frequency table:		Frequency	
Type of Countermeasure	Innocent	Guilty	All Subjects
None	44	10	54
Altered Breathing	24	37	61
Mental	49	97	146
Physical	10	10	20

Note, among those subjects reporting countermeasure use, 52.2% (72 of

138) reported attempting more than one countermeasure.

Summary of Spontaneous CMs in Laboratory Testing

- 3 Lab Studies tested effect of Spontaneous CMs
- Findings of all 3 generally consistent.
 Spontaneous CM attempts by guilty subjects are common.
- Spontaneous CMs are <u>Ineffective</u>.
 - None of them were successful in producing a false negative outcome (Honts et al studies).
 - Nor were they able to alter the rate of inconclusive outcomes (Honts et al studies).

Honts, et al., examined the impact of CM use on the validity of the CQT

For guilty subjects there was no effect of the spontaneous use of countermeasures on their numerical scores.

- However, for innocent subjects there was a significant and NEGATIVE relationship between use of countermeasures and their numerical scores r = -.43
 - That is, Innocent subjects who used countermeasures produced more negative scores (M = -3.91) than did Innocent subjects who did not attempt countermeasures (M = 4.55).

Specific Point Countermeasures

- The Specific Point Countermeasures (SPC) attempt to alter a polygraph test outcome by changing a subjects physiological reactivity at specific places in the test.
- In the first edition of A Tremor in the Blood, Lykken claimed that people could easily beat a CQT by biting their tongues or pressing their toes against the floor during the comparison questions. Lykken claimed to have demonstrated this in some classified research for the U. S. Air Force.

Physical SP Countermeasures

- In the early 1980s Honts and his associates began a series of laboratory studies examining the validity of Lykken's claims about the effectiveness of physical countermeasures.
- These studies all used the laboratory paradigm developed by Raskin and his students at the University of Utah during the 1970s.

PDD Research

- Research on PDD has been conduced in both Laboratory and Field Settings.
- Laboratory Research is valuable because it allows for precise control of experimental variables. It is also possible to study some questions in the laboratory that may be difficult or impossible to study in the field.

 Field Research is important because it allows for research under real world conditions. Unfortunately, it is almost impossible to conduct countermeasure research in field settings.

Honts et al. CM Studies Mock-crime lab studies All programmed guilty (PG) taught CQT theory and scoring. All PG taught how and when to apply CMs All PG coached in using CMs unobtrusively but without attaching instrument. Coached (1985a) during mock presentation of similar question series. Coached and given feedback (1985b)

The Honts et al., CM Studies

 Honts et al., (1985a-coached) examined biting the tongue or pressing the toes during the comparison questions. Only a 4% FN rate.



The Honts et al., Studies
 Honts et al., (1985b coached and given feedback) examined biting the tongue and pressing the toes during the comparison questions. In this study the FN rate was 47%.



The Honts et al., (1987-coaching only and feedback) examined biting the tongue and pressing the toes during the comparison questions under higher motivation. FN rate climbed to 70%.



The Honts et al., (1994-coached and reedback) examined both physical (PCM) and mental (MCM) countermeasures. PCM produced 37% FN, MCM produced 25% FN.

Mental

Physical



Countermeasures and the CIT

- Lykken, Ben-Shakkhar and Furedy argue for the superiority of the CIT and have even suggested that the CIT is immune from countermeasures.
- Honts, Devitt, Winbush & Kircher (1996), *Psychophysiology, 33*, 84-92, used mental and physical countermeasures against a CIT- CM *coaching provided*.
- Physical CMs reduced decision accuracy from 80% to 10%.
- Mental CMs reduced decision accuracy from 80% to 40%.
- Computer algorithm (CAPS, Kircher & Raskin 1988) correctly classified 40% Physical CM group and 80% of the Mental CM group using EDA amp. and RLL.

Results of Honts et al., 1996 CMS and the CIT



Countermeasure Information

 A great deal of information available to interested subjects. Maschke, G. W., & Scalabrini, G. J. (2000). The lie behind the lie detector. Available free online at AntiPolygraph.org to everyone. Lots of other material is around, much of it of poor quality.

Some Threats

INTERNET
 Doug Williams
 George W. Maschke & Gino J. Scalabrini
 OTHERS

 PassAPolygraph.com
 WikiHow.com
 PolygraphExpert.net

Polygraph.com

POLYGRAPH TEST? Get PROPERLY prepared, or you will wish you had!

Today is Sunday, May 21, 2006

When are you scheduled for a polygraph test?

Don't even think about taking it until you are properly prepared!



POLICE POLYGRAPH EXPERT DOUG WILLIAMS

With Doug's manual, video/dvd, & personal consultation, you will be properly prepared.

He has the proven expertise and the demonstrated ability to teach you how to

ALWAYS PASS - NO MATTER WHAT - GUARANTEED!

Page 1 of 12

Doug Williams

USAF (67-69)

BS degree 1972 in Police Science

- Oklahoma City PD (69-79) Detective Sgt.
- 1972 Grad of Dick Arther's Nat. Tng. Center
- He states he Conducted 6,000 exams (72-79)? (3-4 daily)
- Testified to congress, talks at colleges and to the media.

Doug Williams CM Training

Dick Arther's (2 pneumos) Influence Behavior highly indicative of guilt or innocence. Go for pretest confessions when possible. Inclusive CQs. (Backster invented exclusive CQs) Respiration most sensitive and accurate. Cardio is second most important. GSR irrelevant. Evaluate charts holistically. (Backster invented) numerical scoring)

Doug Williams – Pre 1996



Doug Williams – May 2005



Doug Williams - Today



2003 Polygraph.com



"THE POLYGRAPH TEST AND THE CVSA (COMPUTER VOICE STRESS ANALYSIS) TEST ARE NOT A LIE DETECTORS. DON'T MAKE THE MISTAKE OF THINKING THAT JUST BECAUSE YOU ARE TELLING THE TRUTH YOU WILL PASS THE POLYGRAPH AND CVSA TESTS! POLYGRAPH AND CVSA TESTS HAVE BRANDED MANY TRUTHFUL PEOPLE AS LIARS! GET MY MANUAL AND PROTECT YOURSELF FROM BEING CALLED A LIAR BY THESE SO-CALLED LIE DETECTOR TESTS!!!" Doug Williams, Author "How To Sting The Polygraph"



THE POLYGRAPH TEST IS THE MOST IMPORTANT TEST YOU WILL EVER TAKET WHY WOULD YOU TAKE IT WITHOUT PREPARING FOR IT FIRST?

"How to Sting the Polygraph" is the first of its kind and the only one ever written by an expert police polygraphist. (all the other ones that are available today are

Polygraph.com July 2005



Scientific research proves that over 50% of honest, truthful people will FAIL their tests just because they are nervous!

Don't let that happen to you! I can teach you how to **ALWAYS PASS**

even if you are nervous (or lying) - no matter what ... GUARANTEED!

Polygraph.com Sep 2006



Doug Teaches

1. Staircase

- 2. Baseline arousal
- 3. Apnea
- 4. High suppression5. Low suppression
- EXHIBIT E FIGURE NO. 2 ----FIGURE NO. 5
EXHIBIT E

Exhibit E shows five common pneumo reactions. You must memorize at least one. They are listed in order of most commonly seen, so figure 1 is best.

Simply breathe by the numbers. (1) inhale about 1/3 the normal amount, hold slightly, showing no jagged edges. (2) inhale again, this time about 2/3rds the normal amount, exhale slowly. (3) inhale and exhale the normal amount. (4) inhale again, just a little more air than normal and exhale slowly. Now take two deep breaths and resume your normal breathing.

Doug's teaching



FIGURE NO. 2

Baseline Arousal. This pneumo reaction is manipulated by inhaling more than you exhale each time in a series of five small breaths until your last breath, you fill your lungs with slightly more than the normal amount of air, just like you are frightened and gasping for breath. You then take two deep breaths and resume normal breathing.

Doug's teaching



Figure 1 (2C1) – Figure 2 (2C2)



FIGURE NO. 3

For those of you who feel inadequate to the task of duplicating a pneumo reaction, the polygraph profession has provided what is known in the trade as a breathing block. This reaction is manipulated by simply holding your breath for about seven seconds, a definite no-brainer. Just hold your breath for a few seconds and then resume normal breathing. This is the easiest but it is also the least desirable.

APNEA Genuine: At Bottom / CM: Elsewhere



High Panting Suppression. Figure 4 illustrates still another pneumo reaction which is manipulated by simply inhaling a normal amount of air and then taking a series of five to seven shallow breaths with your lungs partially full.

Example High Panting Suppression "Breathing Outside the Box"



"Breathing Outside the Box"



FIGURE NO. 5

Low Panting Suppression. Figure 5 is a variation of Figure 4 except that you take five to seven shallow breaths with your lungs almost empty.

Example Effort at Figure 5



Polygraph.com



A.S. onset on 23C



Stim Test



Attacking the Key (#4)



Too good to be true?



Too good to be true. (TGTBT)

Law of Inequalities – Dr. Gordon Barland
A reaction on a comparison question that's "too good to be true" is not true. It is probably artificial.
A reaction on a relevant question that's "too good to be true" is true. It is probably genuine.
DON' T tell examinee it is TGTBT
DON' T show the chart.
DON' T explain what aroused your suspicion.

YOU DECIDE



Chart 1 & 2 Tongue bite Chart 3 Anal Sphincter



PolyScore Results: NDI

PolyScore® for Windows Version 5.5

No Deception Indicated--Probability of Deception is Less Than .01

Zone/MGQT Zone/MGQT Zone/MGQT

Charts Used

EXAMI/CHARTI- MGQTBD3	1997/04/30 15:18 ваявазаваа учуучуу учуучу	QIG=86 QIC=99	Rates Resp= 6 Pi
EXAMI/CHART2- MGQTBD3	1997/04/30 15:27 aaaaaaaaaaa vvvvvv vvvvvv	QIG=68 QIC=98	Rates: Resp= 7 Pt
EXAMI/CHARTS- MGQTBD3	1997/04/30 15:33 заязаязаяа үүүүүү үүүүүү	QIG=88 QIC=98	Rates: Resp= 7 Pt

Spot/Vertical Scores

0.02	3R5 Have you been offered any money to work for a FIS?
0.01	3R8 Have you secretly provided the amm technology to any foreign goverment?
0.00	3R3 Have you been directed to penetrate the CIA by any foreign instelligence service?

Approximate Signal Weights

Respiration	+0.39
Blood Volume	+0.30
Flectrodermal	+0.29

Doug: Sensor Pad Advice

CAUTION: a few years ago the polygraph industry came up with a sensor pad that you sit on while taking the test, but don't worry, it's a joke. It won't detect anything if you will be VERY careful, VERY subtle and NEVER tighten more than about half tension. The only way this pad will work is if they inserted it "where the sun don't shine". (But if you are really paranoid, I guess you could put a towel or something in your drawers to act as a barrier between the sphincter and the so-called "sensor pad"). Just remember it is almost impossible to be too subtle and it is very easy to over do it, so just take it easy.

Doug: 3 Types of CQs

Probable Lie (can have time bars)
Also called Known Lie
Irrelevant Qs
Emotion Provoking Qs (rare)

Doug: Don't react to initial IRs

You should have no difficulty recognizing these control questions! REMEMBER (If the first two questions are the same or similar to those listed above, they are called introductory question – do not manipulate a reaction to introductory questions.)

SAT CMs

Examiner may tell you to not answer aloud but to remain silent. Examiner may have you nod or shake head. You are to manipulate a reaction to the controls and remain calm on the relevants just like you would if you were answering aloud.

YES Test CMs

Examiner may ask you to deliberately lie on all the relevants.
DO NOT manipulate a reaction to ANY of the question when examiner tells you to do this.

Doug's Nov 2004 advice:

Ist chart: Sphincter (very subtly) & different respiratory patterns (not a block) on all CQs

 2d chart: Either resp or sphincter on ONLY ONE CQ (preferably a known lie)
 3d chart: NO CMs at all

Doug's May 2005 advice:

1st chart: Sphincter (very subtly) & different respiratory patterns (not a block) on all CQs
 2nd chart: Sphincter only on CQs (preferably know lie CQs)
 3rd chart: Mental CMs only

• Training – Doug Williams June 2005

Administered in my Polygraph Test Preparation Training Room in Norman, OK.

\$1,500

Administered at your location.

\$3,000

(plus \$1,000 per day travel time & expenses*)

* Tratel time autoide the greater Oklahoma City metropolitan area is \$1,000 per day. For example, conducting a polygraph test training session in which there is one day of travel time each way typically costs \$5,000. (Two days travel = \$2,000. One day training = \$3,000. Total = \$5,000)

* Expenses: These consist of first class airline tickets, taxi, hotel, meals & tips.

A retainer is required in advance for anticipated work and expenses.

Training – Doug Williams Sept 2006

arrival at my office)

Administered at your location -**\$5,000** (plus expenses)

 (A \$3,000 non-refundable retainer is required in advance - the balance of \$2,000 is due upon my arrival at your location)

AntiPolygraph.org

George Maschke 1995



Excellent polygraph manual with extensive chapter on CMs.
 Very active bulletin board.

"Know thy enemy and know thy self and you will win a hundred battles." -- Sun-tzu, The Art of War.

George Maschke 2004 – 2007













George Maschke's Story (according to George Maschke)

- 1983 enlisted as a private in the US Army as an interrogator. Completed the interrogation course at the US Army Intelligence Center, Fort Huachuca, Arizona, and Arabic language training at the Defense Language Institute Foreign Language Center. Served two years as a strategic debriefer in the Arabic language with a Military Intelligence. Rose through the ranks from private (E-1) to sergeant (E-5).
- While overseas, took night courses at the University of Maryland, and in 1987, the Army awarded him a two-year ROTC scholarship to finish his bachelor's degree. Majored in Middle Eastern studies and learned Persian (Farsi) to complement his Arabic. In 1989, he completed his bachelor's degree, received a commission as a second lieutenant in the Army Reserve, and was assigned to the Military Intelligence
- January 1991, was attached to the FBI's Washington Metropolitan Field Office Assisted with the World Trade Center bombing. Helped the FBI in the translation of a bomb manual seized from a suspect in the case.
- Helped US Attorney's Office for the Southern District of New York, which was prosecuting the case, translate Arabic documents.

George Maschke's Story (continued)

- After being released from active duty in the TRADEBOMB case, he completed master's degree before leaving for New York, and continued to work toward a doctorate. In the Army Reserve, was to the J-2 (intelligence) section.
- In late 1994, applied to become a Special Agent in the FBI. Took and passed a battery of general exams, and tested in several languages, including Arabic and Persian (Farsi)
- On 10 May 1995, the Los Angeles Field Office called him to start work in two weeks as a contract linguist pending agent hire. They schedule a polygraph exam.
- On 15 May 1995, he reported to the Los Angeles Field Office for the polygraph exam. Special Agent (SA) Jack Trimarco conducted the pre-employment screening exam
- He was told he had shown signs of deception on the questions about unauthorized release of classified information and contacts with foreign intelligence agencies.
- Three weeks later he sent a letter to FBI Director Louis Freeh.

George Maschke's Story (continued)

- Volunteered to become a Technical Reservist to the LAPD Anti-Terrorist Division reviewing Arabic documents. (Technical reservists are volunteers who have a special skill but are not sworn.)
- The LAPD scheduled an examination at their headquarters with Ervin L. Youngblood. Accused of employing "countermeasures." LAPD representatives requested he rescind his application as a Technical Reservist.
- Around May 1995 his top secret clearance with the Army was due for a periodic review. His clearance had been administratively downgraded to secret pending review, as five years had elapsed since his clearance was granted.
- After the FBI polygraph exam, he continued to serve in the Army Reserve in capacities that did not require access to top secret information and was promoted to captain
- In the fall of 1997, he moved overseas to work for an international organization (The Hague, Netherlands).

George Maschke's Story (continued)

- In January 1999, he had background interview with an Army counterintelligence (CI) agent. States his top secret clearance was being held up because the FBI had reported derogatory information based on the pre-employment polygraph exam.
- In August 1999, security clearance had been upgraded to interim top secret, and he enrolled in the correspondence portion of the U.S. Army's Reserve Component Military Intelligence Officer Advanced Course (MIOAC). This course (at Ft. Huachuca) requires a top secret clearance and must be completed in a timely manner following the correspondence phase.
- Began to speak publicly on polygraph matters. In July 1999 posted under the pseudonym "Captain Jones" on NoPolygraph.com. He began researching polygraphy in earnest.
- In December 1999, wrote an article titled, "The Lying Game: National Security and the Test for Espionage and Sabotage" that was first published on the website of the Federation of American Scientists.
George Maschke's Story (continued)

On 18 September 2000, he and Gino Scalabrini co-founded AntiPolygraph.org and published *The Lie Behind the Lie Detector*, a free e-book with chapters on polygraph validity, policy, procedure, and countermeasures. States information on countermeasures is not to help liars beat the system, but to help the truthful.

 13 December 2000, the Army's Central Clearance Facility moved to revoke his security clearance.

 Unable to complete the Military Intelligence Officer Advanced Course, without a top secret clearance, he was ineligible for promotion from captain to major.

Twice passed over for promotion, the U.S. Army Reserve notified him he would be discharged as of 1 February 2004.

 Continues to maintain his web site and actively speak out against polygraph.

In April 2001, spoke before the National Academy of Sciences' Committee to Review the Scientific Evidence on the Polygraph, and I find it gratifying that their final report, *The Polygraph and Lie* Detection

AntiPolygraph.org Oct 2006



AntiPolygraph.org

Home

Tell a Friend About

AntiPolygraph.org

What We Want

Publications

Campus Poster Initiative

FAO

Nessage Board

- 10 Latest Posts

Blog

Reading Room Personal Statements Polygraph Litigation NAS Polygraph Review FOLA Links Cet Involved Hake a Donation

On-line Store

Search

AntiPolygraph.org

Search WWW

Contact Us

AntiPolygraph.org

Polygraphy is Quackery

"The decision to hire, or not to hire an applicant, should never be based solely on the results of the polygraph examination."

Scientists overwhelmingly agree that polygraph "testing" is junk science. The only "raging debate" pits people who don't yet understand that it's flimflam against the growing number who do.

Our government's stubborn reliance on this pseudoscience poses a clear and present danger: make-believe science yields make-believe security.

This non-profit, public interest website is dedicated to telling the truth about lie detectors that those with vested interests in perpetuating the polygraph don't want you to knew.



American Polygraph Association

The lie detector is itself <u>based on lies</u>...

Did you know it takes less training to give lie detector "tests" than it does to give hairouts? The <u>longest polygraph school</u> (run by the U.S. Government; perhaps its students are slow learners) produces newly minted polygraphers in just 14 weeks -- less than half the time it takes to graduate from a typical barber college. But while barber college graduates cannot detect lies.



Audio Introduction to this Website (5.1 mb MP3)

For the truth about polygraph "tests" and how to pase (or beat) them:



Domnload The Lie Behind the Lie Detector (1 mb PDF)

Join Discussion List by Sending E-mail to:

> antipolygaph: subscribe@ topica.com

Tou're Not Supposed to Know This:

Gino J. Scalabrini

Maintains a low profile
Graduated from Dartmouth College
Applied for Federal position. Disqualified because of polygraph.
Affiliated with George Maschke by early 2000.

Influencing Others.

Campus poster # 4 - 2003

How to Beat a Polygraph Test

THE DIRTY LITTLE SECRET behind the polygraph is that the "test" depends on trickery, not science. The polygraph operator exhorts the examinee to answer all questions truthfully, but secretly assumes that denials to certain questions - called "control" questions - will be less than truthful. One commonly used control question is, "Did you ever lie to get out of trouble?" The polygrapher steers the examinee into a denial, warning that amone who would lie to get out of trouble is fundamentally untrustworthy. But secretly, it is assumed that everyone - eventhose truthful about the matter under investigation - has lied to get out of trouble.

The test is scored by comparing physiological reactions to these probable-lie control questions with reactions to relevant (e.g., "Did you do it?") questions. If reactions to the "control" questions are greater, the examinee passes; if reactions to the relevant questions are greater, he/she fails. This simplistic methodology has no grounding in the scientific method and results in many innocent people being wrongly branded as liars.

Polygraphtests also include irrelevant questions like "Istoday Friday?" The polygrapher falsely explains that such questions provide a "baseline for truth," because the truth of the examinee's answers will be obvious. But in reality, irrelevant questions are not scored at all and merely serve as buffers between sets of relevant and control questions.

Spies, terrorists, sex offenders, and other criminals who understand the trickery behind the "test" can beat it by covertly augmenting their physiological reactions to the control questions. This can be done by constricting the anal sphincter muscle, biting the side of the tongue, or merely thinking exciting thoughts. Although polygraphers frequently claim they can detect such countermeasures, no polygrapher has ever demonstrated any ability to do so, and peer-reviewed research suggests that they can t. This being the case, why should any reliance be placed on polygraphres/frequently claim onlygrapher by the tong of the to

AntiPolygraph.org

Influencing Others.

Como Vencer un Examen de Polígrafo

LO QUE NO QUIEREN QUE SEPA del polígrafo es que el "examen" depende de la artimaña y el engaño, no de la ciencia. El examinador del polígrafo exige al examinado que conteste honestamente todas las preguntas, pero secretamente presume que las denegaciones a ciertas preguntas, las así llamadas "preguntas de control," no serán verídicas. Por ejemplo, una pregunta de control común es, ¿Ha mentido para no tener problemas? El examinador guía al examinado a contestar no, advertiendo que cualquier persona que mentiría para no tener problemas es de poca confianza. Sin embargo, secretamente se presume que todo el mundo, hasta los honestos en el asunto bajo investigación, ha mentido para no tener problemas.

El examen se califica por comparar las reacciones fisiológicas a las preguntas de "probable mentira," contra las reacciones a las "preguntas relevantes," tales como, ¿Lo hizo Ud.? Si las reacciones fisiológicas son mayores a las preguntas de control, la persona aprueba; si las reacciones son mayores a las preguntas pertinentas, la persona no aprueba. Dicha metodología simplística no tiene nade que haber con el metódo científico y resulta que muchas personas inocentes sean llamadas mentirosas.

Los examenes de polígrafo también incluyen "preguntas irelevantes," tales como, "Es hoy viernes?" El examinador falsamente explica al examinado que dichas preguntas demuestren

George Teaches

Just say No! Complete Honesty-tell examiner you understand PDD and give them a copy of the LBTLD Don't try- drugs, wiggling toes, tack in shoe, meditation, hypnosis, antiperspirant on hands,

George Teaches (continued)

2 types of CMs Behavioral
 Chart recording

Behavioral CMs

- Make no admissions except minor transgressions to "control" questions and sign no statements,
- Examiners will fake empathy, play on your ego and become aggressive with you in the post test.
 Dead the DODE Intervention handout

Read the DODPI Interrogation handout.

Behavioral CMs (continued)

Make a good 1st impression-Arrive early, wear conservative clothing, polish your shoes, minimal make up for women You are being watched, bring reading material like Newsweek, National Geographic, Wall Street Journal, PDA, laptop etc.

Behavioral CMs (continued)

During the pre-test
Keep your answers short,
Be polite
Don't be chatty or overly friendly ,
Avoid "yes basically", "not really"

Examiner Expectations

Truthful behavior-based on Arther and Reid truthful people may initially express nervousness that will dissipate, they are completely cooperative, emphatically deny the crime,

 Examiner expectation of liars-fidgety, nervous, ambiguously answers, looks away, closes eyes

Head games –"What do you know about PG?"

Tell examiner heard it is very accurate Have a friend in law enforcement who advised them to tell the truth Lot more accurate than "voodoo" CVSA Eddie Haskell your examiner Important!! Don't memorize the lines in this book. The examiner may recognize it

Identifying CQs

Look for ambiguity
Read the examiner
Give small admissions and see if they modify the question. That will tell you it is a CQ.
Questions are reviewed in groups

Chart recording manipulations

Breathing CMs

Use 15 -30 BPM about 2-4 seconds each. Not too deep.

Maintain from tubes on to tubes off.

Chart Recording Manipulations (continued)

As soon as you recognize a CQ or right after answering change your breathing pattern to match one of the DODPI patterns in the TDA manual on the website. Blocking (Apnea) I/E ratio change Slow rate Suppression

Chart Recording Manipulations (continued)

 Enhance the response by causing a cardio / EDA response. Choose only one of the following;

- <u>Mental CMs-</u> count backwards by 7 from a large number or some other difficult math problem. (Use mental imagery- falling off a cliff, meeting a snake, being raped)
- Tongue Biting- bite the side of tongue hard enough to cause moderate pain for 8-20 seconds. Be subtle!

What about the Anal Sphincter?

Do not squeeze your anal sphincter.

No examiner has ever demonstrated the ability to detect CMs with the sensor but don't do it just in case.

Using the CMs taught on the web site can not be detected by activity sensors.

What about the Acquaintance Test?

Try to produce a strong reaction to the key in the ACQ to lull your examiner into a false sense of security.

What about the RQs?

Don't worry about the RQs!

Just breathe normally and try not to think about them.
 You are in control and *not your examiner*.

Post Test Procedure

Don't stay for a post test.

Your examiner will interrogate you and trick you.

Counter- Counter Measures

SAT
Yes Test
Refer to the IRQs as CQs
Time bar IRQs,

If accused of employing CMs

Deny, Deny, Deny!!!!

Examiner may tell you
He knows what you are doing
Obvious you are manipulating the charts,
Make no admissions that may be worse than any transgression.

PolygraphExpert.net



Polygraph Expert

Chad Dixon
Not a polygraph examiner
6 hours of instruction
Practice Test for \$495.00
\$895 in Indiana; \$2,895 + expenses at your site

• However, sources like the Maschke & Scalabrini's book do contain accurate information about how polygraph tests work and about possible countermeasures. • The critical question is: Does polygraph information affect the validity of the polygraph?

Dr. Rovner's Findings (Rovner et al, 1979 and Rovner, 1986) Information had no effect on accuracy. Identical Accuracy for Innocent and Guilty subjects with and without information alone. Information + Practice increased False Positives and False Negatives. But no significant difference in Guilty scores Numerical scores for Innocent subjects in the information + practice were lower than information and innocent control group

Studies on Polygraph Information

Rovner et al., 1979 examined the effects of Information and Practice on the CQT.

No effects for information Weak, but possibly confounded effect for Practice



Alloway & Honts, 2002

 Alloway & Honts gave subjects one week of access to *The Lie Behind the Lie Detector* and then tested them with the new Test for Espionage and Sabotage.

 They found no effects for exposure to the book.

Honts, et al., also reported No relationship between countermeasure use and: Age Sex Number of years of education

When subjects answer a comparison question with a "yes," is that a countermeasure?

- Honts, Raskin, & Kircher (1992) examined the frequency of YES answered controls in 290 laboratory subjects. They report:
 - YES answers were common.
 - 23% of the subjects gave at least one YES answer to a comparison question.

YES answers were most often given by Innocent subjects

- 67% of the YES answers were given by Innocent subjects
- There were no reliable differences in the numerical scores resulting from comparison to YES versus NO answered comparison questions

Conclusions

- The research shows that YES answers to comparisons are a common behavior by Innocent subjects taking CQTs.
- YES answered controls should be used in scoring.





Who will the examiner pass?



FICTION

CMs are easy to detect

 Only true for <u>naive</u> subjects who overdo it.

 CMs not effective against experienced examiner

 Probably only true with <u>naive</u> subjects

FACT

It is hard for guilty to suppress reactions.
It is easy to make realistic looking reactions.
It is difficult to detect CMs when skillfully applied by trained subject.
We know who we catch but not who got away.

Some Scientific Talk about CMs

Honts et al (2009)

In a study using both probable-lie and directed-lie examinations. Honts et al (2009) debriefed participants about their spontaneous use of countermeasures.

Honts et al (2009)

In a study using both probable-lie and directed-lie examinations Honts et al (2009) debriefed participants about their spontaneous use of countermeasures.

Honts et al (2009)

Overall 48% reported attempting a countermeasure. Probable-lie 50% attempted Directed-lie 46% attempted Of the Guilty 78% attempted Probable-lie 83% attempted Directed-lie 72% attempted (p = .095) •Of the Innocent 18% attempted (p > .001) Probable-lie 15% attempted Directed-lie 20% attempted
Honts et al (2009) Scores



Current Trends

- There currently are countermeasure classes being offered to polygraph examiners that claim to provide ways for examiners to detect countermeasures.
- Some of the material in this classes is based on case studies of individuals who have attempted countermeasures, failed and then confessed to countermeasure use.
- In science this is know as a case study approach.
- In science, case studies are never used to define causal relationships.
- In science, case studies are used to stimulate hypotheses that can then be used to define causal relationships.

Case Studies

A case study is a descriptive record of a single individual's experience, or behavior, or both.
Kazdin (2003) suggests case studies have 5 major purposes:

- 1. Source of inference, hypothesis or theory
- 2. Source of developing therapy techniques
- 3. Allow the study of rare phenomena
- 4. Provide exceptions to accepted ideas, theory or practice
- 5. They have persuasive and motivational value.

Limitations of Case Studies

- Working with a small N means our findings may not generalize.
- Unable to completely observe individual can result in a decrease in specificity. In PDD we can watch the outside but not the inside of the subject.
- Subjects may fail to report all important information thinking it irrelevant or embarrassing.

Current Trends Ctd.

Some polygraph experts have used these case study data to analyze current field cases and then to offer testimony in courts of law:

- That based on their study of these field cases they can determine when subjects are attempting countermeasure.
- That if a subject is attempting countermeasures the test should be considered unreliable and not admitted as evidence.
- Neither of these conclusions is supportable as science.

Why those claims are not Science

Scientific studies show that innocent individuals now frequently engage in countermeasures. Although doing so produces negative effects for them in terms of their total score. Nevertheless, most are classified correctly.

Should they be denied the benefit of a polygraph they passed?

No published scientific study shows that any person to be better than chance at detecting countermeasures, either from watching the subject or from analyzing the charts.

 Extraordinary claims of ability, require extraordinary evidence of performance. Why those claims are not Science
The case study approach used here has one fatal flaw.
There is no comparison group.

The unanswered, and ultimately critical question is:

How often do non-countermeasure users show the same patterns that are being used to allegedly detect countermeasures?

If such patterns and markers are displayed by subjects who are not using countermeasure, then they are useless as countermeasure detectors as they are as likely to implicated an non-user as a user.

In scientific terms, the case studies being used, do not test for specificity.

New Research by Honts & Crawford (2009)

Upon learning about experts methods and claimed abilities, Honts' laboratory decided to look as some non-countermeasure charts and see if the patterns and markers were present.

We sampled 92 cases from the recent validity study by Honts et al., (2009).

Since experts claimed to be able to detect countermeasures by recognizing respiration patterns trained by Doug Williams we chose to look for those patterns of response in our subjects, NONE OF WHOM had be exposed to the Doug Williams materials.

Recall Doug Williams' Example Respiration Patterns



Doug Williams' Respiration patterns in Innocent subjects (ICQ & IRQ=innocent question responses.)



Doug Williams' Respiration patterns in Guilty subjects



Percentage of Individuals showing the DW Respiration Patterns

INNOCENT

GUILTY

60



The Future of Polygraph Countermeasure Research

In the late 1980s a decision was made by the U. S. Government that all internal polygraph countermeasure research would be classified.

Moreover, it was decided that the U. S. Government would not provide funds for any private-sector polygraph countermeasure research, unless it too was classified.

Polygraph research, if done properly, is expensive.

Until Government policy changes, or researchers in other countries take the initiative, it is unlikely that there will be much progress in the area of polygraph countermeasures research.



WHO DETERMINES EFFECTIVENESS

EXAMINER The Pretest Interview Professionalism – Discussion – F/F/F The In-test Phase Instructions – Equipment - Technique The Post Test Interview Chart Evaluation – Interrogate / Interview

NORMAL Tracings

Respiration Shallower Slower Both mean shorter line length EDA Simple rise and recovery, not complex Cardio Simple rise and recovery, not complex

Indicators of Countermeasures

Respiration
#1 – "Breathing Outside the Box"
Slower rate on relevants

Possible Indicators of Countermeasures

Respiration Abrupt recovery from a "reaction" Abrupt – NO Staircase – YES Is 6 to 8 breath cycles OK? Run an Acquaintance Test to be sure. Surreptitiously record breathing. Progressive increase in amplitude followed by a deep breath

Possible Indicators of Countermeasures

Respiration (cont.)

Holding breath at anywhere other that the bottom of the breath cycle

Diverging baselines
 Results from a stomach crunch or sphincter squeeze

Indicators of Countermeasures

Respiration (cont.) Exaggerated notch on the first inhalation after the answer Extended answering distortion Usually results from a muscle contraction during the answer Panting on a comparison question Excessive deep breaths on the comparisons or relevant questions

Abrupt recovery. Patterned breathing.



Answer-like distortions.



Panting after answer



Indicators of Countermeasures

EDA

- Unusually flat
 - May indicate drugs antihistamines, hand lotions
- Unusually active doesn't habituate last chart is very reactive
 - May indicate movements
- Inconsistent EDR Latency
- a. stimulus onset to response on set
 - b. what is atypical?
 - c. Look for the indiv. response stereotypically
- d. if all CQ's EDA's are different, latencies be suspicious
- Exaggerated EDA's Reactions
- a. globally out of proportion
- b. frequency
- Devil's Finger = physiologically impossible

Very Active EDA



"Devil's Finger-Loss of electrical contact



Indicators of Countermeasures

EDA (cont.)
 Late reactions to the comparison questions
 Subject answers then thinks, bites, etc.
 Abrupt onset
 Numerous artifacts

Lip Biter to Irrelevants

Lafayette Polygraph System

_ 8 ×



Indicators of Countermeasures Cardiograph Rapid rise amplitude on the comparison questions Lasts to long and to good to be true Often has a secondary response before the first is completed Sharp rises or jumps-obvious movement artifacts.

Rapid Rise Cardio



Same shot with Foot Sensor



Indicators of Countermeasures Cardiograph (cont.) Repeated artifacts specific to the relevant or comparison questions Clusters of activity or patterns Excessive heart rate In excess of 100 beats per minute may indicate drug use

Indicators of Countermeasures

General Indicators Consistent significant responses to the relevant questions often similar to the sacrifice relevant question Erratic, messy charts Delayed answers Delayed physiological responses on the comparison questions Behavioral CMs- Eddie Haskell

Indicators of Countermeasures General Indicators (cont.) Remember to look for the indicators in clusters Barland's Law of Inequalities (2000) When it looks to good to be true on the comparison questions – IT IS. When it looks to good to be true on the relevant questions – ITS GENUINE.

Low Level – Holding Breath



Low Level - cardio


More Breath Holding



Decision Making

Review charts globally. Don't focus on individual spots. (Forest for the trees)
Double check by scoring across.
Don't be afraid to score a ZERO.
Sum of pneumos and sum of cardios compared to sum of EDA (Chuck Slupski).

Anti-Counter Measures and Counter-Counter Measures

 Anti-Counter Measures –Routine actions taken to preclude or deter the use of countermeasures

Counter-Counter Measures-Actions taken when counter measures are suspected

Anti-Counter Measures

Pre-Test Interview

- Project Professionalism
- Inquire about polygraph knowledge
 - ?? Discuss/challenge the use of CMs ??
 - Consider a CM Advisory form for screening tests.
 - Inquire about internet sophistication, email addresses, etc.
- Explain how polygraph works.
- Question Review:
 - Concise Relevants
 - IRs as known truth or identity, not necessarily "controls".

Anti-Countermeasures (continued) Disguise irrelevants as comparisons "Prior to moving to Texas, did you go to school?" Between the ages of 18 and 25, did you ever work at Wal-Mart?" Always use an Acquaintance Test Don't show it to the examinee If clearly attacked, consider "baiting" examinee.

I1g-Prior to 2005, did you attend high school?



Anti-Countermeasures In-Test Phase Stress Cooperation & Truthfulness to pass Give specific, exact instructions. Use a movement sensor device Watch the subject as much as possible Utilize a camera to assist & record. Incorporate a discussion of the camera as an anti-CM device. Arrange the room so that you can better watch the subject and let them know you will be watching them. Consider assisted stimuli presentation to lower

cognitive load.

Countering Countermeasures

In-Test Phase
 Silent Answer Test
 Repeat Last Word Test
 Eyes Shut Test
 Concise Relevant Questions

Countering Countermeasures

Chart Scoring Numerical and global Compare component sums with each other TGTBT on comparisons = not true Individual Response Specificity Selective DBs Diverging Pneumograph tracings Strange drops in EDA

Countering Countermeasures Post Test Interview

If DI on tests – interview accordingly If INC on tests – Interview on the relevant issue (s), not on CMs. After admission/confession, interview on CMs Why did you take the testing knowing... What did you do to try to beat it? Where did you get that knowledge? Why did you decide to tell the truth? What did I say?

Activity Sensors

Federal Examiner's Handbook

C18.3.3.1. A MSD is designed to detect covert movements during a PDD examination.

 C18.3.3.2. A MSD shall be used in all PDD examinations, when available.

C18.3.3.3. When a MSD is employed, sensitivity settings for the component should allow for optimum tracings.

Fighting Back

Counter-Countermeasures are likely to become an endless game.

Countermeasure Detectors
 Movement Detectors

- EMG
- Statistical

Automated Artifact Detection Algorithm Development

Sample A











OSS-3 – Sample A

Lafayette Instrument Company

Objective Scoring System - Version 3

By Raymond Nelson, Mark Handler and Donald Krapohl (2007)

No Significant Reactions
p-value: < 0.001 - Probability this result was produced by a deceptive persor
Mixed Issues (Screening)
Screening
None - No significant differences in artifact distribution
0.123 - No significant differences in spot scores
XXXXXXXXXXX 07J-1121
Wednesday, June 24, 2009

		Spot Scores	Decision Alpha (1 ta Cumulative normal distribution (Bar	Components		
ID	p-value	Result	Setting	Value	Component	Weight
R4	< 0.001	No Significant Reactions	NSR	0.100	Pneumo	0.19
R6	0.003	No Significant Reactions	SR	0.050	EDA	0.53
R8	0.019	No Significant Reactions	Kruskal-Wallis	0.100	Cardio	0.28
			Test of Proportions (2 tailed)	0.100		

	Relevant Questions	
ID	Question Text	Answer
R4	Since beginning probation, did you have any contact with your past victim?	No
R6	Since beginning probation, and besides what you disclosed, did you have any other unauthorized contact with your wife?	No
R8	Since beginning probation, and besides what you disclosed, were you completely alone with any other minor?	No

Chart B-1











OSS-3 Sample B (without Test of Proportions)

Lafayette Instrument Company

Objective Scoring System - Version 3

By Raymond Nelson, Mark Handler and Donald Krapohl (2007)

Result Description Exam Type Scoring Method Test of Proportions PF Name Report Date Examiner

No Significant Reactions

		Spot Scores	Decision Alpha (1 ta Cumulative normal distribution (1 a	ailed) rland 1985)	Con	nponents
ID	p-value	Result	Setting	Value	Component	Weight
R4	0.010	No Significant Reactions	NSR	9,100	Pneumo	0.19
R6	0.004	No Significant Practions	SR	0.058	EDA	0.53
R8	0.020	No Significant Reactions	Test of Proportions (2 tailed)	0.100	Cardio	0.28

	Relevant Questions								
ID	Question Text	Answer							
R4	Did you ever attempt to touch Lisa's vagina?	No							
R6	Did you continue to sexually touch Lisa after she told you 'no' or 'stop'?								
R8	Besider what you disclosed, did you ever take off Lisa's shirt or bra?	No							

OSS-3 Manual Artifact Review



OSS-3 Sample B

Lafayette Instrument Company

Objective Scoring System - Version 3

By Raymond Nelson, Mark Handler and Donald Krapohl (2007)

Result

Inconclusive - Collect additional test data if possible

Description Exam Type Scoring Method Test of Proportions PF Name Report Date Examiner

Multi-facet (MGQT) Two-stage (Senter 2003) < 0.001 Significant differences in artifact distribution - review data for intentional distortion XXXXXXX XXXX 07J-1221 Wednesday, June 24, 2009

		Spot Scores	Decision Alpha (1 ta Cumulative normal distribution (Bar	Components		
ID	p-value	Result	Setting	Value	Component	Weight
R4	0.003	Inconclusive	NSR	0.100	Pneumo	0.19
R6	0.002	Inconclusive	SR	0.050	EDA	0.53
R8	0.010	Inconclusive	Test of Proportions (2 tailed)	0.100	Cardio	0.28

	Relevant Questions									
ID	Question Text	Answer								
R4	Did you ever attempt to touch Lisa's vagina?	No								
R6	Did you continue to sexually touch Lisa after she told you 'no' or 'stop'?	No								
R8	Besides what you disclosed, did you ever take off Lisa's shirt or bra?	No								

Automated Artifact Detection - A



Automated Artifact Detection - B



С

20.00

91.00

84.00

50.00

47.00

40.00

Measurement Table - B

	Measurements													
				(Kircher	and Ras	kin 1988;	Raskin k	Kircher H	onts and	Horowit	s 1988)			
							Cha	rt 1						
	C3	R4	C5	R6	C7	R8								
P1	A303	261.00	A273	246.00	252.00	236.00								
P2	A353	290.00	A328	309.00	321.00	296.00								
E	54.00	25.00	15.00	28.00	11.00	23.00								
С	91.00	20.00	84.00	50.00	47.00	40.00								
F														
Chart 2														
	C3	R4	C5	R6	C7	R8								
P1	177.00	166.00	A236	191.00	A245	186.00								
P2	214.00	223.00	A283	237.00	A280	236.00								
E	36.00	11.00	19.00	11.00	16.00	9.00								
С	124.00	44.00	90.00	31.00	94.00	32.00								
F														
							Cha	rt 3						
	C3	R4	C5	R6	C7	R8								
P1	180.00	198.00	A222	189.00	A236	169.00								
P2	247.00	256.00	A285	252.00	A313	228.00								
E	24.00	15.00	19.00	10.00	13.00	17.00								
С	147.00	43.00	69.00	58.00	54.00	70.00								
F														
							Cha	rt 4						
	C3	R4	C5	R6	C7	R8								
P1	200.00	162.00	A222	A202	A208	173.00								
P2	260.00	240.00	A285	A288	A291	247.00								
E	10.00	32.00	12.00	17.00	7.00	21.00								
С	60.00	35.00	46.00	46.00	38.00	51.00								
F														
							Cha	rt 5						
	C3	R4	C5	R6	C7	R8								
P1	172.00	A215	170.00	142.00	161.00	148.00								
P2	234.00	A276	227.00	194.00	216.00	214.00								
E	36.00	35.00	15.00	14.00	17.00	27.00								
С	57.00	66.00	49.00	26.00	44.00	23.00								
F														

Chart B-1



Measurement Table - B

Measurements														
				(Kircher	and Ras	kin 1988;	Raskin k	Kircher H	onts and	Horowit	s 1988)			
							Cha	rt 1						
	C3	R4	C5	R6	C7	R8								
P1	A303	261.00	A273	246.00	252.00	236.00								
P2	A353	290.00	A328	309.00	321.00	296.00								
E	54.00	25.00	15.00	28.00	11.00	23.00								
С	91.00	20.00	84.00	50.00	47.00	40.00								
F														
Chart 2														
	C3	R4	C5	R6	C7	R8								
P1	177.00	166.00	A236	191.00	A245	186.00								
P2	214.00	223.00	A283	237.0	A280	236.00								
E	36.00	11.00	19.00	11.00	16.00	9.00								
С	124.00	44.00	90.00	31.00	94.00	32.00								
F														
			\smile				Cha	rt 3						
	C3	R4	C5	R6	C7	R8								
P1	180.00	198.00	A222	189.00	A236	169.00								
P2	247.00	256.00	A285	252.00	A313	228.00								
E	24.00	15.00	19.00	10.00	13.00	17.00								
С	147.00	43.00	69.00	58.00	54.00	70.00								
F														
							Cha	rt 4						
	C3	R4	C5	R6	C7	R8								
P1	200.00	162.00	A222	A202	A208	173.00								
P2	260.00	240.00	A285	A288	A291	247.00								
E	10.00	32.00	12.00	17.00	7.00	21.00								
С	60.00	35.00	46.00	46.00	38.00	51.00								
F														
							Cha	rt 5						
	C3	R4	C5	R6	C7	R8								
P1	172.00	A215	170.00	142.00	161.00	148.00								
P2	234.00	A276	227.00	194.00	216.00	214.00								
E	36.00	35.00	15.00	14.00	17.00	27.00								
С	57.00	66.00	49.00	26.00	44.00	23.00								
F														



Measurement Table - B

	Measurements													
				(Kircher	and Ras	kin 1988;	Raskin k	Kircher H	onts and	l Horowit	s 1988)			
							Cha	rt 1						
	C3	R4	C5	R6	C7	R8								
P1	A303	261.00	A273	246.00	252.00	236.00								
P2	A353	290.00	A328	309.00	321.00	296.00								
E	54.00	25.00	15.00	28.00	11.00	23.00								
С	91.00	20.00	84.00	50.00	47.00	40.00								
F														
Chart 2														
	C3	R4	C5	R6	C7	R8								
P1	177.00	166.00	A236	191.00	A245	186.00								
P2	214.00	223.00	A283	237.00	A280	236.00								
E	36.00	11.00	19.00	11.00	16.00	9.00								
С	124.00	44.00	90.00	31.00	94.00	32.00								
F														
Chart 3														
	C3	R4	C5	R6	C7	R8								
P1	180.00	198.00	A222	189.00	A236	169.00								
P2	247.00	256.00	A285	252.00	A313	228.00								
E	24.00	15.00	19.00	10.00	13.00	17.00								
С	147.00	43.00	69.00	58.00	54.00	70.00								
F														
							Cha	rt 4					 	
	C3	R4	C5	R6	C7	R8								
P1	200.00	162.00	A222	A202	A208	173.00								
P2	260.00	240.00	A285	A288	A291	247.00								
E	10.00	32.00	12.00	17.00	7.00	21.00								
С	60.00	35.00	46.00	46.00	38.00	51.00								
F														
							Cha	rt 5						
	C3	R4	C5	R6	C7	R8								
P1	172.00	A215	170.00	142.00	161.00	148.00								
P2	234.00	A276	227.00	194.00	216.00	214.00								
E	36.00	35.00	15.00	14.00	17.00	27.00								
С	57.00	66.00	49.00	26.00	44.00	23.00								
F														


Measurement Table - B

Measurements															
(Kircher and Raskin 1988; Raskin Kircher Honts and Horowits 1988)															
Chart 1															
	C3	R4	C5	R6	C7	R8									
P1	A303	261.00	A273	246.00	252.00	236.00									
P2	A353	290.00	A328	309.00	321.00	296.00									
E	54.00	25.00	15.00	28.00	11.00	23.00									
C	91.00	20.00	84.00	50.00	47.00	40.00									
F															
Chart 2															
	C3	R4	C5	R6	C7	R8									
P1	177.00	166.00	A236	191.00	A245	186.00									
P2	214.00	223.00	A283	237.00	A280	236.00									
E	36.00	11.00	19.00	11.00	16.00	9.00									
C	124.00	44.00	90.00	31.00	94.00	32.00									
F															
	Chart 3														
	C3	R4	C5	R6	C7	R8									
P1	180.00	198.00	A222	189.00	A236	169.00									
P2	247.00	256.00	A285	252.00	A313	228.00									
E	24.00	15.00	19.00	10.00	13.00	17.00									
C	147.00	43.00	69.00	58.00	54.00	70.00									
F															
				\frown	\frown		Chai	rt 4							
	C3	R4	C5	R6	C7	R8									
P1	200.00	162.00	A222	A202	A208	173.00									
P2	260.00	240.0	A285	A288	A291	247.00									
E	10.00	32.00	12.00	17.00	7.00	21.00									
C	60.00	35.00	46.00	46.00	38.00	51.00									
F															
Chart 5															
	C3	R4	C5	R6	C7	R8									
P1	172.00	A215	170.00	142.00	161.00	148.00									
P2	234.00	A276	227.00	194.00	216.00	214.00									
E	36.00	35.00	15.00	14.00	17.00	27.00									
С	57.00	66.00	49.00	26.00	44.00	23.00									
F															



Measurement Table - B

Measurements														
(Kircher and Raskin 1988; Raskin Kircher Honts and Horowits 1988)														
Chart 1														
	C3	R4	C5	R6	C7	R8								
P1	A303	261.00	A273	246.00	252.00	236.00								
P2	A353	290.00	A328	309.00	321.00	296.00								
E	54.00	25.00	15.00	28.00	11.00	23.00								
С	91.00	20.00	84.00	50.00	47.00	40.00								
F														
Chart 2														
	C3	R4	C5	R6	C7	R8								
P1	177.00	166.00	A236	191.00	A245	186.00								
P2	214.00	223.00	A283	237.00	A280	236.00								
E	36.00	11.00	19.00	11.00	16.00	9.00								
C	124.00	44.00	90.00	31.00	94.00	32.00								
F														
Chart 3														
	C3	R4	C5	R6	C7	R8								
P1	180.00	198.00	A222	189.00	A236	169.00								
P2	247.00	256.00	A285	252.00	A313	228.00								
E	24.00	15.00	19.00	10.00	13.00	17.00								
C	147.00	43.00	69.00	58.00	54.00	70.00								
F														
							Cha	rt 4						
	C3	R4	C5	R6	C7	R8								
P1	200.00	162.00	A222	A202	A208	173.00								
P2	260.00	240.00	A285	A288	A291	247.00								
E	10.00	32.00	12.00	17.00	7.00	21.00								
С	60.00	35.00	46.00	46.00	38.00	51.00								
F														
Chart 5														
	C3	R4	C5	R6	C7	R8								
P1	172.00	A215	170.00	142.00	161.00	148.00								
P2	234.00	A276	227.00	194.00	216.00	214.00								
E	36.00	35.00	15.00	14.00	17.00	27.00								
С	57.00	66.00	49.00	26.00	44.00	23.00								
F														



Automated Artifact Detection - B



С

20.00

91.00

84.00

50.00

47.00

40.00

Conclusions

Automated artifact detection is possible Automated artifact detection is complicated!!!! Depends on Feature Development Through measurement Artifact Detection ipsative-z (within subject measurement) Test for Randomness Test of Proportions

Countermeasure Pop Quiz

Rules

Look at the chart. Decide whether the examinee is attempting to manipulate the tracings. After each chart I will show the same chart with the motion sensor turned on. All, none, or some of them are manipulated. Ready?









No Question Selected.

























No Question Selected.









Grading Scale

10 Correct = A
Less than 10 correct = buy a motion sensor

Questions?

Thank you for your dedication to professionalism.