APA MAGAZINE

The Magazine for the Polygraph Professional

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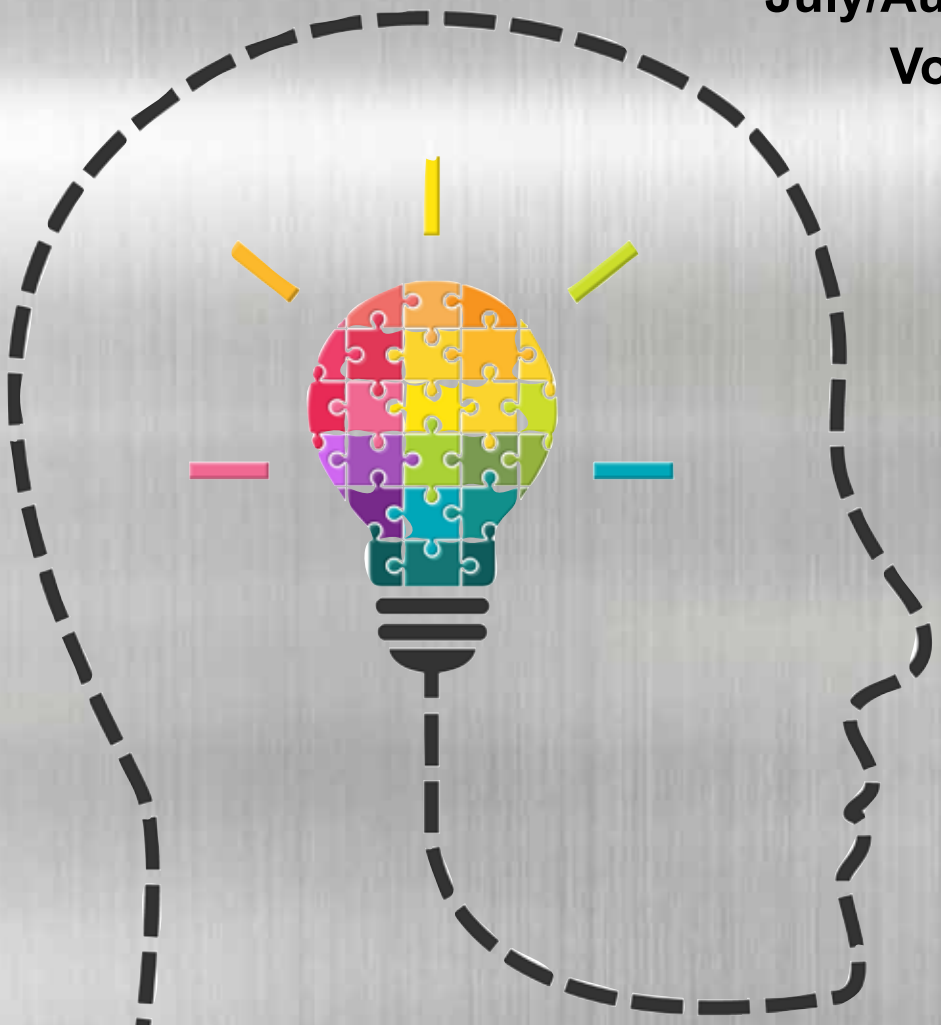

Fortifying the Examiner

51st Annual Seminar

American Polygraph Association

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Deadlines

This issue closed on July 31, 2016.

Deadline for September/October 2016 issue is September 30

Submission of Articles

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EDITOR'S CORNER

By Mark Handler

Greetings to all my fellow examiners from the editor's desk.

I hope this finds you are healthy, happy and well. The 2016 APA seminar is fast approaching and I look forward to seeing many of you there. This year's seminar theme is "Fortifying the Examiner" and Seminar Chair Mike Gougler has outdone himself, in my opinion, with putting together an awesome content in a great venue.

Every year I attend these seminars, I am reminded of the commitment many of you make to this honorable profession of credibility assessment. I purposely slipped two terms in that last sentence I would like you to consider before delving further into the topics of this writing. The first is "professional", the second "credibility assessment".

The Merriam-Webster online dictionary describes a professional as "someone who does a job that requires special training, education or skill" in the first line in their definition. I believe that defines what we do and it defines one of the main purposes of the APA annual seminar. Professional's achieve, maintain and increase their body of knowledge as they practice their profession.

The second term I ask you to think about is "credibility assessment". Krapohl et al. (2012) define credibility assessment as:

An umbrella expression for the mul-

tiple-disciplinary field that relies on physiological and behavioral measures to test the agreement between an individual's memories and statements. Credibility assessment approaches have included reaction time tests, word association tests, polygraph, central nervous system measures, and behavioral analysis. See: Krapohl & Trimarco (2005).

The federal government's very own polygraph school changed its name from Department of Defense Polygraph Institute to the National Center for Credibility Assessment is 2007 to reflect a broadening vision that includes all technologies useful in assessing credibility assessment. This name change reflected prescience and hopefulness that the profession could develop new tools and techniques to help decision makers make better decisions.

After all, isn't that what we are supposed to do? If one believes their credibility assessment tool is effective, then the test result should matter. If you have a realistic understanding of the credibility assessment technique you use, then you, as a professional, can advise the end user or consumer about the test result. If you don't understand what the test result means in a given setting, how can you advise the requester on how to interpret the result?

So with the backdrop of being professionals involved in credibility assessment, informing decision makers to help them make better decisions, let's talk about "Information Gain". Information Gain is a concept brought to the polygraph profession is 2009 by Drs. Charles Honts and Will Schweinle. They borrowed the concept from eyewitness identification experts Wells & Olson and adapted it to psychophysiological detection of deception (PDD), or polygraph. Handler, Honts & Nelson (2013) went on to apply it to the Directed Lie Screening Test and Honts & Handler (2014) applied it to the Relevant-Irrelevant test.

I want to revisit the Information Gain and some of the associated concepts because as I travel and share with my fellow professionals, I find there is a great deal of misunderstanding (or under appreciation) of this and its allied concepts. In my endeavor to try to help to continue to raise the profession's collective knowledge in credibility assessment, I thought to take these on this magazine article.

In order to appreciate and grasp these

concepts we need to understand some definitions. Let's start with a few so we have a basis from which to work.

1. Base Rate- the prevalence of the condition of interest. How much of something is there in the thing we are looking at.

   For example, an examiner conducting a PCSOT monitoring examination would expect to have a lower base rate of Guilt than when conducting a maintenance examination. We would hope there are far fewer PCSOT examinees reoffending than breaking probation, parole or therapy rules.

   I will show you that the base rates can have a profound effect on something called the Outcome Confidence of a test result.

2. Sensitivity- for us, how well the test correctly identifies a "Guilty" subject. (Note in the science of credibility assessment, Guilt and Innocence refers to the ground truth status.)

3. Specificity- how well the test correctly identifies the truly "Innocent" subject.

4. False Positive- when the test incorrectly identifies an Innocent subject as Guilty.

5. False Negative- when the test incorrectly identifies a Guilty subject as Innocent.

6. Bayes Theorem- formula for determining conditional probability named after 18th-century British mathematician Thomas Bayes. The theorem provides a way to revise existing predictions or theories given new or additional evidence (www.investopedia.com/terms/b/bayes-theorem.asp). It combines Outcome Confidence and base rate to offer a posttest probability of Guilt or Innocence.

7. Outcome Confidence- the probability that a subject who failed the test is actually Guilty and the probability that someone who passed the test is actually Innocent. It is also known as Positive Predictive Value (PPV) and Negative Predictive Value (NPV). Essentially it provides an end user with an estimate of how confi-

dent they can be in a test result.

8. Information Gain- an analysis that provides us with the difference between the base rate of Guilt (or Innocence) and the posttest conditional probability. Essentially, how much information did the test result give us above what we already knew, or estimated, in terms of the base rate of Guilt or Innocence.

In a credibility assessment situation, we have some base rate of Guilt before conducting the test – which can be anywhere from 0 though 100%. We probably will not ever know the exact base rate, but we can actually make logical estimates. Dr. David Raskin gave an example of how to work backwards with test results, sensitivity and specificity to estimate the base rates in a 1986 paper he wrote for the Utah Law Review. Being able to estimate the target base rate is important, as it can help defend using a credibility assessment tool, as I hope to show. One of the longstanding arguments against credibility assessment screening is the base rate phenomenon. Opponents give examples of extreme hypothetical base rate situations and use the large number of errors to condemn the process. In order to formulate a thoughtful response, we have to take some time to understand these concepts so we can counter-argue. Let's keep going.

As base rates become extreme, then simply using them to predict the subject's ground truth status is actually more accurate than the mere credibility assessment test result. For example, say you are attempting to use a credibility assessment tool to test an applicant on whether they are actively spying against the United States. We hope the base rate of true active spies among applicants for a security clearance is very, very low (way less than 1%, let's say 1/10th of 1% or one in a thousand). That means that for every thousand applicants we test, less than one is Guilty.

Now we know all psychometric credibility assessment tests are imperfect, they have estimated false positive and false negative rates. If we assume the false positive rate for our credibility assessment tool is 10%, that means for every thousand Innocent people we test, 100 will fail. If our test is good enough to identify that one spy in a thousand, then he or she would get caught in the net along with 100 Innocent subjects. If we were to use that test's result as a basis for disquali-

fying (or allowed it to have a negative impact on an applicant) the test result could actually cause us to make a worse decision than if we simply predicted the Guilty person at the base rate. Here is how that is so.

If we never tested any of the applicants and called them all Innocent, we would have gotten 999 out of 1000 right. If I used the very accurate credibility assessment test we only got 900 out of 1000 right, accuracy of 90%. The test result was worse than guessing!

Hopefully my extreme example gives you an idea of how the base rate can affect the test outcome confidence. Meehl & Rosen wrote one of the seminal papers on this topic in 1955 and it still stands true today. Dr. David Raskin alerted us to these phenomena apply directly to credibility assessment in his1986 law review I mentioned earlier.

With any credibility assessment tool, at some point it becomes more informative to "guess the base rate" than to give the test. But how do we know where that point is? Opponents can argue the credibility assessment test adds nothing (in facts detracts) from informing the consumer. This can be quite true, but there is a potential tool to help us work around this problem, it is called Information Gain.

Information Gain analysis helps address the base rate argument and answer questions about a test's usefulness for a given base rate. It uses Bayes Theorem across all base rates and shows where the test result provides additional information over simply predicting Innocence or Guilt based on the base rate. It can guide us to select those target areas for testing that fall within the productive range for the technique we select. If we know for a given technique, the range of base rates for productive test results, we can adjust our test targets or questions. If we know our test can't "make us any smarter" than simply predicting the base rates, we should reconsider those targets for more appropriate ones.

We can also use Information Gain(IG) analysis to compare different credibility assessment tools. For example, in Handler, Honts & Nelson (2013), we compared the IG from the DLST to that of the Unassisted Lie Catcher. We looked at how much of a gain in information we get using the DLST for screening as compared to say an oral hiring board. We found the DLST provided significantly more IG for both

Innocent and Guilty subjects across a wide range of base rates. This provided support to the argument for using a credibility assessment tool in hiring, as long as the estimated target base rates fell within those ranges. Once the target base rates become too extreme, credibility assessment tools don't add any more IG than simply predicting (guessing) at the estimated base rate.

Understanding these types of concepts help us create better testing targets and techniques. Understanding how to use this information helps us better advise our consumers or end users, so they make better decisions. If we don't take the time to understand concepts such as these, how can we explain them to others? Credibility assessment professionals have an ethical responsibility to understand the tools they employ. It is not simply enough to be a polygraph "technician" when others rely on your test result to help guide their decisions.

I implore you to seek higher understanding of these concepts. There are a number of excellent resources available to help you get a good grasp on these concepts. I remain at your service and am willing to help you. A number of the papers mentioned are available for download from the APA website under the Publications tab. Please feel free to reach out to me at editor@polygraph.org and I will do my best to help increase your credibility assessment professionalism.

APA ELECTIONS 2016

Select the best team

Election: 2016 APA Election of Officers

Results by Question

President-Elect

Total voters: 2472	Votes	Percentage
1. James McCloughan	339	75
2. Daniel Mangan	116	25

Director 2

Total voters: 2472

1. Raymond Nelson	409	100

Director 4

Total voters: 2472

1. Sabino Martinez Jr.	277	65
2. V. Cholan Kopparumsolan	152	35

Director 6

Total voters: 2472

1. Darryl Starks	261	61
2. Brian R. Morris	166	39

Director 7

Total voters: 2472

1. Gary F. Davis	398	100

Director 8

Total voters: 2472

1. Daniel Violette	313	73
2. Essam Aly Gamal El-Din	115	27

IN MEMORIAM
RAY DAMIAN INGLIN (1927 - 2016)

With his family gathered around him, Ray passed away peacefully Tuesday, June 21, 2016 at St. Alphonsus Hospital in Boise, ID at age 89 from injuries due to a fall at his home in Garden City the day before. He was affectionately known by his family as "Big Ray" for his warm heart, everoptimistic spirit, and gift for making friends wherever he went.

Ray was a proud and devoted father to his five children, raising them in Whittier, California. He was also a cherished grandfather to his grandchildren. Ray is survived by his wife, Senia (Bloomstrand); children: Sonja and her husband, William Strausz and their son, Samuel; Steve and his daughter, Cassandra; Ingrid and her husband, Robert Warden and their children: Rob and Anna; Raymond Jr. and his wife, Cindy and their daughter, Grace, and Damian and his wife, Kathryn and their children: Liliana and Luca. The youngest of four children, Ray is survived by his sister, Ann Nielsen of Boise and was preceded in death by his siblings: Steve Inglin and Clementina Hill.

Ray was born April 24, 1927 in Boise to entrepreneurial

Swiss immigrant parents, Ray grew up in Meridian where he both attended school (graduating from Meridian High School in 1944) and also worked on the family farm. After being drafted into the U.S. Army, he served in Germany with the military police from 1945 to 1949. Ray graduated in the Los Angeles Police Academy (LAPD) class of 1955. His long career with the LAPD included being awarded the Medal of Valor for risking his life to save people trapped in a burning building, being a founding member of the LAPD's elite Special Weapons and Tactics (SWAT) team and becoming the head of the Scientific Investigation Division's Polygraph Section. After retiring from the LAPD in 1982, he was a private investigator and polygraph consultant.

In 1989, he became the chief polygraph examiner with the Washoe County Sheriff's Office in Reno, Nevada. In 2000, Ray and Senia returned to Boise, Idaho. Ray served in leadership positions on many boards and associations including as president of the Los Angeles Police Credit Union, California Association of Polygraph Examiners, American Association of Police Polygraphists and the American Polygraph Association, and was a Fourth Degree Knight of the Knights of Columbus.

Business Practice for Sale

TKJ Polygraph, LLC (Truth, Knowledge & Justice), a mid-western company based in Omaha, Nebraska testing in (Nebraska, Iowa, Missouri) is a private company providing polygraphs for Attorneys (Defense & Prosecution), Public Defenders, US Probation, Department of Corrections, Law Enforcement, Fire, Therapist and the public sector.

The business has a solid foundation and sustained growth over the nine years in practice. There is a dominate internet presence and diversity of clients as well as a sustained record of performance. Most clients are contractual and significant periods remain on those contracts ensuring immediate income. Instruments and office supplies and furnishing are negotiable. The client testing base does not permit for this as a "part-time" activity, however, the clients testing needs allow for scheduling flexibility. Seriously interested buyers should contact Bryant Crosby at tkjpolygraph@cox.net, cell: 402-238-5528. The owner is looking to relocate.

Polygraph Examiner Training Schedule

American Polygraph Association

51st Annual Seminar/Worshop
August 28- September 2, 2016
Baltimore, MD

Continuing Education Seminar
November 3-4, 2016 (Virginia Beach)

PCSOT Advanced Course (Virginia Beach, VA)
November 2, 2016

Marston School

Basic Polygraph Instruction (400 hours)
January 9, 2016 to March 17, 2017 - San Bernardino, California

Basic Polygraph Instruction (400 hours)
April 10, 2016 to June 16, 2017 - San Bernardino, California

Basic Polygraph Instruction (400 hours)
July 10, 2016 to September 15, 2017 - San Bernardino, California

Basic Polygraph Instruction (400 hours)
October 2, 2016 to December 8, 2017 - San Bernardino, California

Attention School Directors

If you would like to see your school's course dates listed here, simply send your upcoming course schedule to editor@polygraph.org

NATIONAL POLYGRAPH ASSOCIATION

2017 SEMINAR & BUSINESS MEETING

January 16, 17, 18, 2017

Golden Nugget Hotel & Casino
Las Vegas, Nevada

For Hotel Reservations Call 1-800-331-5731 and mention the National Polygraph Association 2017. Reservations must be made by **December 16, 2016** to receive Seminar Rate. Saturday arrivals are limited.

The 2016 Seminar and Business Meeting will be held at the Golden Nugget Hotel & Casino, Las Vegas, Nevada. Rooms rates for the seminar is $ 59.00 per night (Sunday-Friday) excluding any applicable tax and energy surcharge. In addition the hotel charges a $20 resort fee which includes many amenities normally incurred as additional charges.

SCHEDULE

Sunday, January 15, 2017

1:00 pm Open NPA Board Meeting
Members urged to attend

Monday, January 16, 2017

7:45 am	Open Remarks
8:00 —10:00	Persuasive Pre-Test
10:00—10:30	Stoelting Vendor Presentation
10:30—12:00	Persuasive Pretest (*cont*)
12:00—1:00	Lunch
1:00—3:00	Persuasive Pretest (*cont*)
3:00—4:00	Putting Out Your Shingle

4:00 pm—6:00 pm Social Reception: Hosted by Complete Equity, Inc.

Tuesday, January 17, 2017

8:00-10:00	Federal Zone/Federal You Phase
10:00—10:30	Lafayette Vender Presentation
10:30—12:00	Federal Zone/Federal You Phase
12:00—1:00	Lunch
1:00—3:00	General Business Meeting
3:00—5:00	Plethysmograph (PLE)

Wednesday, January 18, 2017

8:00—10:00	AFMGQT & Scoring
10:00—10:30	Limestone Vender Presentation
10:30—12:00	AFMGQT & Scoring (*cont*)
12:00—1:00	Lunch
1:00—1:30	Axciton Vendor Presentation
1:30—5:00	Pharmacology & Chemical Countermeasures
5:00	Closing Remarks

Wednesday, January 18, 2017 (Dedicated PCSOT Training) Merion Classroom

8:00—12:00	Peak of Tension in PCSOT
1200—5:00	PCSOT

REGISTRATION

Name: _____

Company: _____

Address:_____

City/State/Zip: _____

Telephone:_____

Email:_____

PCSOT Training: Yes ☐ No ☐

Registration Cost:

Member: $150.00 (advance)

$175.00 (at door)

Nonmember: $ 350.00*

Credit cards accepted only on NPA website

***NOTE**: If you join the NPA prior to the seminar you can register at the member price. Annual Dues are $100.00. (Application on the NPA website, nationalpolygraph.org.

Mail registration and check to:

National Polygraph Association
P.O. Box 460672
Papillion, NE 68046

SPEAKERS

Dennis Westerman: Lieutenant Westerman has 30 years of Law Enforcement, and currently serves as Lieutenant and Quality Assurance for one of Texas Department of Public Safety (DPS) Criminal Investigations Division's Polygraph Units. He is currently the Coordinator for Texas DPS Law Enforcement Polygraph School and has instructed for APA, AAPP and numerous other Federal and State organizations and associations. He was recognized as the 2012 Texas Association LE Polygraph Investigator of the Year.

Matthew Mull: Lieutenant Mull has served over 20 years as a Texas Trooper and for Texas DPS. He graduated from Texas DPS in 1995 and served in Special Crimes/Criminal Intelligence. He is a former coordinator for DPS Law Enforcement Polygraphs and has instructed there since 2007. He currently serves at DPS headquarters and is a Lieutenant in the DPS Polygraph unit.

Gregg Mrochko: Lieutenant Mrochko received his B.A., Administration of Justice from the University of Pittsburgh and graduated the Northeast Counterdrug Polygraph Program (NCTC) in 2004, administering polygraph examinations since that time. He is an adjunct instructor at (NCTC) and has instructed at NCCA. He is the Board President for the Polygraph Law Enforcement Accreditation organization and has provided advanced instruction to Senior Examiner courses in the U.S.

Mark Holtsmaster: Sergeant Holtsmaster received his B.A Economics from University of Scranton. He has served with the Pennsylvania State Police since 1993 and an examiner since 2008. He is an adjunct instructor at the NCTC Polygraph Program and instructed at NCCA. Mark has also taught advanced instructions at Senior Examiner Courses in the U.S. Since 2011, he serves as the Polygraph Coordinator for the Pennsylvania State Police supervising more than 20 polygraph examiners across the State. He is also a member of the Polygraph Law Enforcement Accreditation (PLEA) organization, accrediting LE polygraph programs in the U.S.

Patty Odum, RN, MSN, FNP-BC. Patty is a board certified Family Nurse Practitioner. She graduated Summa Cum Laude from Western University of Health Sciences with a M.S. in Nursing. She graduated Magna Cum Laude from the University of Colorado with a B.S. in Nursing. Mrs. Odum has 22 years of nursing experience and provided comprehensive care as a nurse practitioner in Internal Medicine, Oncology, Geriatric and Hospice. She is currently an instructor at Marston Polygraph Academy in Pharmacology and Chemical Countermeasures.

Chip Morgan: Chip is a nationally recognized trainer and lecturer proving instruction for over 35 years at polygraph schools, national training seminars and colleges throughout the U.S. Canada and Mexico. Chip is a 1975 Backster school graduate and served as a Detective, Criminal Polygraph Examiner. He maintains a thriving private practice. He is the past president of the National Polygraph Association, International Brotherhood of Police Officers, Boise Police Association, Idaho Fire & Arson Investigators and several other professional associations. Chip is a Court Certified Expert in Idaho and California State Courts and the US Federal Court Systems. He has been a certified Instructor since 1980 and is a published author.

Melanie Javens: Melanie began employment at Complete Equity Markets in 1988 as receptionist. She quickly made her way up the ranks first as a word processor and then as an administrative assistant. She obtained her property/casualty and Life/Health insurance licenses and began her career in sales over 25 years ago. She currently underwriters Professional Liability for Safety Professionals, Polygraphists & Forensic Consultants and is President of three risk purchasing groups.

AMERICAN POLYGRAPH ASSOCIATION (APA)
CONTINUING EDUCATION SEMINAR
CO-SPONSOR – VIRGINIA POLYGRAPH ASSOCIATION
ADVANCED REGISTRATION IS REQUIRED

APA FED ID # 52-1035722

WEDNESDAY, NOVEMBER 2, 2016
8:00am – 5:00pm

HILTON VIRGINIA BEACH OCEANFRONT
3001 ATLANTIC AVENUE
VIRGINIA BEACH, VA 23451
To make Hotel Reservations:
Call the **1-800-445-8667** or **757-213-3000**

Room rate: $96.00, SINGLE/DOUBLE, plus taxes (currently 14% tax, PLUS $1.00 per room per night occupancy tax) SELF PARKING is complimentary. (NOTE: Room rate is based on government per diem rates and may change minimally in October 2016)

All reservations must be guaranteed by a major credit card or advance deposit in the amount of one night's lodging. Reservations not guaranteed will be automatically cancelled at the cut-off date.

CUTOFF DATE for hotel reservations is **10/3/16** Individual departure dates will be reconfirmed upon check-in. (5 DAY CANCELLATION notice required)

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Fax 423-894-5435

POST CONVICTION SEX OFFENDER TESTING (PCSOT)

ERIC J. (Rick) HOLDEN

CONTINUING EDUCATION HOURS
When you attend this seminar, you receive up to 8 CEHs (Continuing Education Hours) approved by the American Polygraph Association and the Federal Certification Program for Continuing Education and Training.

APA Cancellations Refund Policy:
Cancellations received in writing prior to **10/3/16** will receive a full refund. Persons canceling **after 10/3/16 will not** receive a refund but will be provided with the handout material.

Tax Deductions:
All expenses of continuing education (including registration fees, travel, meals and lodging) taken to maintain and improve professional skills are tax-deductible subject to the limitations set forth in the Internal Revenue Code.

(The registration fee includes professional instruction, seminar materials, AM and PM Refreshment Breaks, Continental Breakfast)

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CONTINUING EDUCATION SEMINAR
CO-SPONSOR – VIRGINIA POLYGRAPH ASSOCIATION
ADVANCED REGISTRATION IS REQUIRED

APA FED ID # 52-1035722

THURSDAY & FRIDAY, NOVEMBER 3-4, 2016
8:00am – 5:00pm

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3001 ATLANTIC AVENUE
VIRGINIA BEACH, VA 23451
To make Hotel Reservations:
Call the **1-800-445-8667** or **757-213-3000**

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REGISTRATION FEE: Pre-paid by October 3, 2016
$250 APA Member/Applicant
$250 VPA Member*
$275 Non-Member

REGISTRATION FEE AFTER October 3, 2016
$275 APA Member/Applicant
$275 VPA Member*
$300 Non-Member

***must be a paid up member of VPA**

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Fax 423-894-5435

TOPICS

Law and Ethics in Credibility Assessment – Gordon Vaughan, APA General Counsel

Panel Discussion: Hot Topics – Gordon Vaughan, Walt Goodson

Understanding Countermeasurers and Improving Chart Data – Walt Goodson

Interview and Interrogation – Blake McConnell

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Cancellations received in writing prior to **10/3/16** will receive a full refund. Persons canceling **after 10/3/16 will not** receive a refund but will be provided with the handout material.

Tax Deductions:
All expenses of continuing education (including registration fees, travel, meals and lodging) taken to maintain and improve professional skills are tax-deductible subject to the limitations set forth in the Internal Revenue Code.

(The registration fee includes professional instruction, seminar materials, AM and PM Refreshment Breaks, Continental Breakfast and Lunch)

LUNCH ATTENDANCE

THURSDAY ___ YES ___ NO ___ #ATTENDING

FRIDAY ___ YES ___ NO ___ #ATTENDING

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ADDITIONAL $50.00 FOR WALK-INS

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51 ST Annual Seminar/ Workshop

American Polygraph Association

FORTIFYING THE EXAMINER

August 28 - September 2, 2016

Hilton Baltimore Hotel

BALTIMORE

MARYLAND

MICHAEL GOUGLER
PROGRAM CHAIR 2016

SUNDAY, AUGUST 28, 2016	
CLASSROOM A	
1:00 - 3:00 PM Counterterrorism Case Study Jamie ASchenbach, MA SA & QC Examiner, DOD	3:00 - 5:00 PM Homicide Case Study MIchael O. Mitchell, MA Retired Maine State Police Detective
SCHOOL DIRECTOR'S MEETING 1:00 - 3:00 PM (ROOM TO BE ANNOUNCED)	
APA WELCOME RECEPTION 6:30 - 8:30 PM	

MONDAY, AUGUST 29, 2016

CLASSROOM A (disponible en Espanol)

7:30 - 8:00 AM Break Sponsored by: **Baltimore Hilton**

8:00 - 9:30 AM OPENING CEREMONIES

Call to Order -	Walt Goodson, APA President
Master of Ceremonies -	Michael C. Gougler, Seminar Program Chair
The National Anthem -	Rebecca Wood
Presentation of Colors -	Baltimore City Police
Pledge of Allegiance -	Walt Goodson, APA President
Taps -	Richard Pascuito, APA Member
Welcome to Baltimore -	Joe Bradley, Chief, FBI Polygraph Program
Greetings -	William Walsh, Maryland Polygraph Association President
Invocation -	Barry Cushman, APA Director

9:30 - 9:45 AM Break Sponsored by: **Baltimore Hilton**

9:45 - 12:00 NOON

APA Standards of Practice

Walt Goodson, APA President

Patrick O'Burke, APA President-Elect

12:00 NOON - 1:00 PM Lunch on your own

1:00 - 5:00 PM

SHIELD: Strength and Honor in Everyday Lawful Decisions

Melvin Allick, Texas DPS

Lacy Wolff, Texas DPS

2:45 - 3:00 PM Break Sponsored by:

(CONT'D)

SHIELD: Strength and Honor in Everyday Lawful Decisions

Sgt. Melvin Allick Texas DPS

Lacy Wolff, Texas DPS

BLUE JAYS vs. ORIOLES 7:05 PM

Tickets $24

Stadium just across the street

TUESDAY, AUGUST 30, 2016		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 9:45 AM Discussion of Valid Polygraph Principles James B. McCloughan APA Director	8:00 - 9:45 AM PCSOT Model Policy Guillermo "Gil" Witte San Diego Police Department PCSOT hours	8:00 - 9:45 AM Building your SHIELD: Practical Application of Resilience Strategies Lacy Wolff, Texas DPS
9:45 - 10:00 AM Break Sponsored By:		
APA ANNUAL BUSINESS MEETING 10:00 AM - 12:00 NOON CLASSROOM A		
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 2:30 PM PLE Principles Mark Handler, APA Editor Pam Shaw, APA Past President	1:00 - 2:30 PM Current Issues in PCSOT Testing Benjamin Blalock Director, PEAK Credibility Assessment Training Center PCSOT hours	1:00 - 2:30 PM APA Applicant Screening Model Policy Barry Cushman, APA Director
POLYGRAPH INSTRUMENTS WORKSHOP 2:30 - 4:00 PM		
CLASSROOM A LAFAYETTE INSTRUMENT	CLASSROOM B LIMESTONE TECHNOLOGIES	CLASSROOM C AXCITON	CLASSROOM D STOELTING COMPANY
7:00 - 11:00 PM THE NATIONAL AQUARIUM Tour the Aquarium, Hors D'oeuvres, Dinner, Dessert and Cash Bar Less than a mile from the hotel, transportation on your own **Cost is $45 per person**		

WEDNESDAY, AUGUST 31, 2016		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 12:00 NOON Current Issues: A Panel Discussion Moderator, Gordon Vaughan Walt Goodson Mark Handler Barry Cushman Jack Trimarco Joe Bradley	8:00 - 10:00 AM Discussing the Latest Research Addressing Breathing Instructions During a Polygraph Exam Dale Austin U.S. Customs and Border Protection	8:00 - 12:00 NOON Reducing Inconclusive Exams Benjamin Blalock, Director PEAK Credibility Assessment Training Center
9:45 - 10:00 AM Break Sponsored **By:**		
(CONT'D) Current Issues: A Panel Discussion Moderator, Gordon Vaughan Walt Goodson Mark Handler Barry Cushman Jack Trimarco Joe Bradley	10:00 - 12:00 NOON Discussing Common Problems Seen During Polygraph Exams and How To Correct Them Dale Austin U.S. Customs and Border Protection	(CONT'D) Reducing Inconclusive Exams Benjamin Blalock, Director PEAK Credibility Assessment Training Center
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 3:00 PM Recent Cases: Interrogations & Confessions Gordon Vaughan APA General Counsel	1:00 - 3:00 PM Confessional to Professional - The Evolution of Investigative Interviewing Andy Griffiths England, United Kingdom	1:00 - 5:00 PM PCSOT Question Construction & Target Selection Guillermo "Gil" Witte San Diego Police Department PCSOT hours
2:45 - 3:00 PM Break Sponsored By: **TEXAS ASSOCIATION OF POLYGRAPH EXAMINERS**		
3:00 - 5:00 PM APA Examinee Suitability Model Policy Raymond I. Nelson APA Chairman of the Board	3:00 - 5:00 PM Law Enforcement, Federal, and Government Examiners: Starting a Private Practice and Keeping it Going George Baranowski APA Director	(CONT'D) PCSOT Question Construction & Target Selection Guillermo "Gil" Witte San Diego Police Department PCSOT hours

THURSDAY, SEPTEMBER 1, 2016

7:30 - 8:00 AM Break Sponsored By:

CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 3:00 PM The Persuasive Interview Lt. Matt Mull, Texas DPS Lt. Dennis Westerman, Texas DPS Lt. Matt Hicks, Texas DPS TDLR credit	8:00 - 10:00 AM The UK PEACE Model - Applicable to the US? Andy Griffiths England, United Kingdom 10:00 - 12:00 NOON PCSOT Updates Patrick O'Burke APA President-Elect PCSOT credit	8:00 - 10:00 AM Domestic Violence Testing & Model Policy Michael C. Gougler , APA Seminar Chair Mark Handler, APA Editor PCSOT credit 10:00 - 11:00 AM Using Math Channels for: Improving Plethesmo scoring, Improving Coutermeasures Detection, Improving Quailty & Scorability of Difficult Tracings Bruce White, Polygraph Researcher and Physicist 11:00 - 12:00 NOON Understanding Polygraph Accuracy with Special Focus on the Intelligence Community's Needs for Dealing with Extreme Base Rates Bruce White , Polygraph Researcher and Physicist

9:45 - 10:00 AM Break Sponsored By:

12:00 Noon - 1:00 PM Lunch On Your Own

(CONT'D) The Persuasive Interview Lt. Matt Mull, Texas DPS Lt. Dennis Westerman, Texas DPS Lt. Matt Hicks, Texas DPS TDLR credit	1:00 - 5:00 PM Discovering Countermeasures Mark Hander, APA Editor Pam Shaw, APA Past President	1:00 - 3:00 PM Using Analogies to Elicit Information Dale Austin U.S. Customs and Border Protection

2:45 - 3:00 PM Break Sponsored By:

3:00 - 5:00 PM Psychological Issues that Affect Polygraph Exams Tiffany Collier University of Texas, Permian Basin	(CONT'D) Discovering Countermeasures Mark Hander, APA Editor Pam Shaw, APA Past President	3:00 - 5:00 PM Using the Directed Lie Technique in Polygraph Exams Dale Austin U.S. Customs and Border Protection

SCHOOL INSPECTOR TRAINING 3:00 - 5:00 PM
(ROOM TO BE ANNOUNCED)

APA ANNUAL BANQUET AND AWARDS
KEYNOTE SPEAKER - RICK DEMPSEY - FORMER BALTIMORE ORIOLES CATCHER
6:30 - 7:00 PM COCKTAILS
7:00 PM DINNER

FRIDAY, SEPTEMBER 2, 2016		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 12:00 NOON Interviewing and Eliciting Information from Resistant Subjects Lori L. Hauser, PhD, ABPP	8:00 - 10:00 AM Contemporary Polygraph Theory: Evidence Based Answers to Common Questions Raymond I. Nelson APA Chairman of the Board	8:00 - 12:00 NOON Examiner Well Being: Dealing with Stress Tiffany Collier University of Texas, Permian Basin PCSOT credit
9:45 - 10:00 AM Break Sponsored By:		
(CONT'D) Interviewing and Eliciting Information from Resistant Subjects Lori L. Hauser, PhD, ABPP	10:00 - 12:00 NOON Algorithm Development - Artifact Detection via Machine Learning and Statistical Learning Theory Raymond I. Nelson APA Chairman of the Board	(CONT'D) Examiner Well Being: Dealing with Stress Tiffany Collier University of Texas, Permian PCSOT credit
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 3:00 PM Possibilities and Pitfalls of Credibility Assessment Technologies for Screening Donald J. Krapohl APA Past President	1:00 - 3:00 PM Maximising Pre-Test Disclosures: A British Perspective Detective Tim Benson Detective Dani Pruett United Kingdom Police	1:00 - 3:00 PM Testing the Juvenile Sex Offender Sabino Martinez, Co-Director Veridicus International Polygraph Academy PCSOT credit
3:00 PM **CLOSING REMARKS** **J. Patrick O'Burke** **APA PRESIDENT**		

51ST ANNUAL APA SEMINAR

AUGUST 28 - SEPTEMBER 2, 2016

HILTON BALTIMORE

401 WEST PRATT STREET

BALTIMORE, MARYLAND 21201

ADVANCED REGISTRATION IS REQUIRED

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ROOM RATE: $132.00, Single/Double occupancy, plus taxes (currently 15.5%), all reservations must be guaranteed by a major credit card or advance deposit in the amount of one night's lodging. Reservations not guaranteed will be automatically cancelled at the cut-off date.
CUT-OFF DATE for hotel reservation is 7/15/16 or until APA's room allotment is fulfilled. Number of rooms is limited. Individual departure dates will be reconfirmed upon check-in. (72 HOUR CANCELLATION NOTICE)

REGISTRATION HOURS: Sunday, 8/28/16 10:00am - 5:00pm
Monday, 8/29/16 7:00am
Seminar Sessions: Sunday-Friday, 8/28/16 - 9/2/16APA Cancellations and Refund Policy: Cancellations received in writing prior to 7/15/16 will receive a full refund.
Registration fee includes professional instruction, seminar materials, refreshment breaks, Sunday Reception and Thursday banquet)

MONDAY NIGHT 7:05 PM	TUESDAY NIGHT EVENT	THURSDAY NIGHT BANQUET
BLUE JAYS vs. ORIOLES	NATIONAL AQUARIUM TOUR AND DINNER	___ #attending
Tickets $24 each	Tour the aquarium, hors d'oeuvres, dinner, dessert and cash bar	___will not attend
#___=$___	Cost is $45 per person #____=$_____	___vegetarian meal(s)

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EMAIL:_____ NAME ON BADGE:_____

GUEST NAME ON BADGE:_____

ADDITIONAL $50 FOR THOSE WHO PAY AT THE SEMINAR

PAYMENT RECEIVED BY JULY 15, 2016
____$400 - MEMBER/APPLICANT
____$550 - NON-MEMBER
____$175 - PER GUEST (Cannot Attend classroom presentations)
(**Guest fee includes:** Sunday Reception, Guest Brunch Monday and Banquet Thursday)

PAYMENT RECEIVED AFTER JULY 15, 2016
____$450 - MEMBER/APLICANT
____$600 - NON-MEMBER
____$225 PER GUEST (Cannot Attend classroom presentations)
(**Guest fee includes:** Sunday Reception, Guest Brunch Monday and Banquet Thursday)

PLEASE CHECK ONE: ____Private ____Law Enforcement ____Government

Your nametag is your admission to all events and activities. Please wear it at all times during the conference.

___$100 - Translation Equipment Fee (must be paid to use the translation equipment)

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By signing here, I give my permission for my name and email address to be listed on the APA Mobile App

PLEASE CONTACT THE APA NATIONAL OFFICE IF YOU HAVE QUESTIONS

LISA JACOCKS, MANAGER
1-800-272-8037
manager@polygraph.org

President's Message

Walt Goodson

"The goal of education is the advancement of knowledge and the dissemination of the truth." – John F. Kennedy

I'll get to the importance of education in a minute, but first; the Baltimore seminar begins later this month and once again there will be a changing of the guard. We will be losing the experience and leadership of Directors and former Past-presidents Barry Cushman and Donnie Dutton who are moving on after extensive service and contributions to the Association. I want to thank Mr. Cushman and Mr. Dutton for their tireless efforts to further the APA mission through their extensive committee and board service. I have benefited immensely from their wisdom and friendship. I also want to congratulate all the winners of the past election including new board member Mr. Sabino Martinez. I have worked with Mr. Martinez in the past, and he is the hardest working man I know. His vigor and common sense approach will surely be an asset to the new Board of Directors.

As my term as president comes to a close, I want to thank the membership, Board of Directors and National Office Staff for their dedication to advancing the APA and polygraph profession during the past year. Since the Chicago seminar, the Board, and National Office Staff have accomplished many goals. They include adopting a Model Policy for Domestic Violence Testing, publishing and pursuing a five-year strategic plan, updating standing committee policies, improving APA business practices, and continuing to improve the quality of APA publications and training seminars. While I'm pleased with these accomplishments, there are many more critical issues the APA must address. These areas include becoming recognized as an actual accreditor by in independent accrediting body, improving how the APA encourages continuing education and quality assurance reviews as well as how we embrace other credibility assessment technologies. Fortunately, incoming President Patrick O'Burke and incoming President-Elect Jamie McCloughan are focusing on these important issues. Please read Mr. O'Burke's article for his ideas on how we can accomplish these goals.

During my five years on the APA Board, I have reflected on our first 50 years as a professional association and pondered our direction in the next 50. When I look ahead, I can't help considering whether polygraph will continue to thrive as a credibility assessment tool or only found in a museum in 2066. Technology has rapidly replaced almost every aspect of our lives with simpler, cheaper and faster methods. Additionally, polygraph has yet to receive a satisfactory level of acceptance by the forensic science community and our profession, as a whole, continues to lack consensus on many polygraph best practices. So will the polygraph examination, as we know it, thrive, survive, evolve or will it be replaced? I for one think it will transcend into something better as long as we as examiners are willing to do the same.

Of course, these thoughts are not original; APA leadership has always urged the profession to evolve collectively. Our past presidents have incrementally raised APA Standards of Practice and educational requisites in the ultimate pursuit of professionalism to ensure the polygraph continues to be a viable public safety tool that protects our communities. One of the most significant contributions our former leaders made, to ensure our status as a professional organization, was to require a college degree to become a Full Member of the APA. Implementing this higher standard was hard fought and still worthy of commendation. It's an ideal, which we should never stray.

Unfortunately, adoption of this educational prerequisite failed to do the one thing it was

intended to do; increase the number of polygraph examiners with college degrees. As of this writing, there is no evidence APA members have or are seeking degrees at a higher rate since the implementation of this educational standard. Moreover, it may have had an unintended consequence of creating a divide in the profession. As of now, approximately 1700 of 2684 APA members are Associate Members. Nine hundred seventeen (917) of these Associate Members are in the Law Enforcement sector, and there are many more Associate Members in the Private sector who are former law enforcement officers. For polygraph to continue to thrive, the APA needs law enforcement partnerships, and law enforcement needs the APA's resources. Law enforcement officers along with their Chiefs, Sheriffs and Directors have considerable influence beneficial to the APA. Additionally, law enforcement needs the APA because it's essential that the multitudes of polygraph exams they administer on free citizens suspected of crimes are conducted to our highest standard to ensure justice.

To continue the APA's pursuit of education and to continue raising our bar, the Board made a 6/3 vote recommendation for the membership to consider at the annual business meeting in Baltimore. You'll find this proposal published later in this magazine. The goal of the recommendation is to continue to raise the membership standards sought by our past presidents and bring them even further in line with other forensic science organizations while providing an additional path to full membership for qualified law enforcement officers. This proposal eliminates the dual-class divisive system of having "Full" and "Associate Members" and replaces it with "Members" and "Associates." If this proposal is approved, most Associate Members with two or more years of membership, and who have attended an APA seminar, will qualify for Member status. In addition to current requirements, approval of this recommendation would further raise our standards and make Member status equally achievable for all sectors of our membership by:

- Requiring all Members first to serve as an Associate for at least two years.
- Having perspective Members demonstrate they are interested in pursuing continuing education by requiring at least 60 hours of advanced training beyond basic polygraph school including the attendance of at least one APA seminar.
- Requiring Members start over as an Associate if they choose to allow their membership to lapse. (Back dues could be paid to maintain membership of the Member that meets all the other conditions of membership)

- Requiring Members to have a college degree. (Currently, an Associate Member with no college experience can challenge the APA written exam to upgrade to Full Member)

- As an alternative to the college degree requirement, Associates who have 60 hours of college and pass the APA written test or have five years of law enforcement experience, meet the college degree requisite. (The Board is currently exploring a friendly amendment that would expand this five years of experience in other professions)

- Sign a document that states they have read and are following our Code of Ethics and Standards of Practice.

This recommendation urges continuing education, attendance of our seminars, raises the minimum college required to be a member by 60 hours and is fair since most APA accredited polygraph schools allow students to substitute law enforcement experience for a college degree. Ultimately it is up to you to decide. If approved, this amendment will get us 60 hours closer to requiring a college degree while providing a much-needed pathway to "Member" status for our dedicated current and former law enforcement personnel who make up the majority of our 1700 Associate Members. There is no doubt this proposal will make us stronger and further unite us as the preeminent credibility assessment association in the world today, tomorrow and in 2066.

Thanks for all you do and I look forward to seeing you in Baltimore.

Board of Directors' Reports

Patrick O'Burke
President Elect

Before I start into the real substance of my article, I want to thank those of you who participated in our most recent election, either by being a candidate or to those who voted for one. It is only through having and participating in a democratic election process that we create vitality and see the implementation of fresh ideas in our organization. I would also like to thank those Board members whose terms expired and did not run for re-election. Either send them an email or shake their hand in Baltimore, thanking them for their invaluable service to the American Polygraph Association.

Several of my recent articles, and in some of my recent polygraph training presentations, I have asked: "does polygraph work." I seem to get a pretty strong consensus that it does. But I also get the curious look of "why are you asking." It has been my practice to tell new and old examiners alike that one of my school graduates is capable of conducting an entirely valid polygraph examination, as valid as any expert. Please understand, this is in no way an advertisement, for I would say the same thing about any other accredited polygraph school graduate who is doing what they were taught. There are two components to this thought that we should all want to analyze. First, can we examine the test that was conducted to see that it complies with Standards of Practice, and was it correctly interpreted? Second, we want to evaluate if the examiner was properly educated and employing standardized, evidence-based principles.

So if new examiners can conduct a valid exam, then why is it so common to see so many examiners highlight their resumes with the school they attended, educational background, and the number of exams they have conducted, as a measure of competence? Simple, it is marketing to assure the consumer that the examiner is competent. Our consumer, the general public, knows little about polygraph except what they have seen in the media. They see the polygraph as a single bell curve, with the "data" plotted as good or bad, and assume accuracy is somehow correlated with resume information. To examine these variables. However, we need to see more than one bell curve; we need one for examiners with college degrees, one for those without, one for those who use the "Best" (name your favorite)

technique, or number of tests conducted. I surmise we would find a microscopic difference in effect size between these various resume bell curve variables for polygraph accuracy.

This does not change the perception of the general public, or that of the scientific community, that education and evidence-based practices are necessary to be accepted as a forensic science. We do need their acceptance, so we walk a fine line between what we require for examiner qualifications and what we need to be accepted in the scientific world. Externally, we need to be aware of meeting their expectations. Internally, within the polygraph profession, we need to be concerned with whether our profession as a whole is complying with our Best Practices, and are engaged in robust quality control methods. When examiners support each other, we want that confidence in each other, for as one goes, we all go.

The APA took a massive step forward in 2012 requiring the use of validated formats and test data analysis. Many do not realize the actual importance of stating that there was a Standard. While some grumbled and complained, it was necessary. What we do not now know is how much of the profession is substantially in compliance with the 2012 Standards. We hope everyone is complying, but we simply do not know, and hoping is never a strategy.

At the conference in Baltimore, we are going to talk about Membership and requirements for Membership. It will be a spirited discussion I am sure, all of which is designed to improve the credibility of the profession. We, as a profession, are going to walk out of that conference with a clearer and brighter path for what membership requirements are a priority. As President Goodson and I have discussed, we are working towards having detailed strategies to incentivize continuing education, place importance on formal education, and rewarding member compliance with evidence-based Standards of Practices.

In my upcoming position as President of your Association, I want you to know what my two priorities will be over the next year. I want to establish Model Policies for quality control, and require that every member has an agency, or private business, internal policy that describes their internal quality control procedures. Secondly, I want to enhance school and educational accreditation for our profession with professional industry accreditation standards. I have been told that these are daunting, if not impossible tasks. I do not believe so.

Quality Control is a complex issue, but everyone must accept that there is no fo-

rensic testing that does not have quality control in place. Perhaps, we start by placing on our informed consent that the examinee has the right to have copies of charts and questions if requested. Perhaps we have to agree to have examinations independently blind scored if the examination results are in question. Perhaps we have to require that a percentage of every examiner's work has to be subject to quality control review for overall compliance with Standards of Practice. As with any change, there will be an adjustment.

Primarily, we need to visualize that there are solutions. I do not know all of the answers, but I do know smart people in our profession. I am going to appoint the brightest minds in our profession, from within the APA, and from our Divisional Affiliate Associations, to come up with workable solutions for the APA on these issues. We will find and implement solutions that demonstrate to the scientific community and the world that polygraph should be accepted as a forensic science.

I am looking forward to hearing from you about these challenges that test us. I do not have all of the answers, but I have the determination to seek out those who can help provide solutions for us. If you would like to be on a committee, or to simply offer input I would be glad to accept that from you. I also am still offering to buy that cup of coffee to anyone who wants to take me up on the offer. I hope to see everyone in Baltimore and listen to what you have to say.

Raymond Nelson
Chairman

The 2016 APA election cycle is complete. Congratulations and thanks to all who participated and voted. Other elections cycles are yet incomplete. We all know and appreciate the importance of democracy and election cycles, but it is easy to loose sight of the reason for that importance. Not only do elections serve as a poll for the conscience and will of the membership or population, but they also serve to keep our leaders accountable to the people they serve. With a large and diverse group of people it will be inevitable that there will be persons and even sub-groups that find themselves in disagreement with the leadership. In a healthy community those disagreements will lead to discussion and the identification of shared values and shared goals that can lead to the development and implementation of effective policies that benefit the community or population as a whole. When people are driven by fear and resentment the expression or resolution of those disagreements can take on hurtful and dramatic or even dangerous

proportions. When driven by selfishness and self-seeking the expression and resolution of disagreements can lead to the development and implementation of policies that can lead to greater opportunities for some, fewer opportunities for others and overall division within an organization. This can lead in time to tension and disunity and division within an organization or group that fails to attend to the needs and concerns of all its members – or tends to favor the needs and concerns of some members over others. At the same time, organizations of all type function in some ways similarly to the organism function – with the goal of survival. This is the basis for the concept of a meme (introduced by geneticist Richard Dawkins in 1976, in attempt to explain the transmission of non-genetic cultural information). Regardless of the overt or stated purpose or goal of an organism or organization, the ultimate goal is survival and proliferation. As organizations grow large and complex they can tend to disunity and division into various factions and interest groups if they do not embrace and become interested in diversity – though not for the sake of diversity itself but for the purpose of promoting effective coordination and collaboration between members and persons of different backgrounds and interests.

One way to ensure stability is to anoint a strong man leader who has the authority to act more or less autonomously, and thereby regulate the expression of differences and conflicts. Strong centralized leadership may be desirable and beneficial in times of crisis when there is less time ponder and plan, or in environments in which the process of democratic discourse and democratic decision making is slow and under-responsive to immediate crisis. When the level of crisis and immediate threat is not in fact a threat to immediate survival or existence, an overly centralized leadership can lead to familiar memetic phenomena in which the goal of longevity and survival begins to circumvent overt and stated goals and purposes such as the promotion of well being of all members of a group or organization. As the old adage says: power corrupts and absolute power corrupts absolutely.

One way to prevent the potentially corrupting influence of fixed leadership is to design an organization in which the leaders function as answerable servants to the membership of the organization they serve. An easy way to do this is to subject all leaders to a periodic election and replacement. An equally important practice is that of limited terms for the highest levels of leadership. These simple practices make leaders accountable to the populations they serve and define

the difference between democracy and dictatorship. Without periodic elections and term limits would be at risk for the development of corrupt and self-serving dynastic machines in our profession's politics. In short, democratically elected leaders can be fired or replaced at the next election cycle. The election process, together with the concept of shared power will ensure that our profession will always function in ways intended to achieve the stated mission and purpose of the membership. Non-democratic leaders cannot be replaced and are more vulnerable to ultimately serve themselves and not the of the members of the population or organization.

For myself, I am constantly reminded of my great fortunate to live in the U.S. where leaders at every level from President to Police are instilled with a sense of duty to others. The U.S. and the American Polygraph Association remain the greatest example in the history of the world – in part due to the election processes we have designed, and in part to our ability to select persons with the greatest commitment to humanity, decency, and forthright principles. Try to imagine the time shortly after the time of the founding of the U.S. when President George Washington, who served two terms from 1789 to 1797, was first preparing to leave office. Never before in the history of the world had the leader of a powerful economy left office without violence. It is likely that many doubted Washington would actually leave office, but when he did leave office non-violently – when John Adams became the second U.S President, - it changed the course of history by changing what people could bring themselves to imagine and expect from our leaders who govern and serve. From that point onward we have lived in a world in which the greatest leaders are but temporary servants. We enjoy may freedoms today simply because we have the power to replace our leadership if we are not satisfied. I hope we never have to experience an organization for which our leadership is not answerable to our membership. Thank you to everyone who voted in the election cycle.

Gary F. Davis
VP Private

Greetings from the Vice President Private (Soon to be Board Member). The heat of the summer is upon us. In a few short weeks we will gather in Baltimore for our Annual Seminar and Business Meeting. I hope and urge you will attend.

During the past several weeks I have had conversations with a number of examiners who are declining to attend the up-

coming Seminar because of what appears to be a rush to judgement of the police. These members believe spending their money in the City of Baltimore dishonors those officers charged and acquitted. Why fund a City with so little regard for those who protect and serve.

For a while I too was concerned about going to Baltimore because of the lack of support of the police and what has no become a shameful prosecution. Yet there are hundreds of dedicated Law Enforcement Officers working every day to make Baltimore safe. They endure constant criticism and threats to their personal safety. The climate today has turned to continued hostility toward the police. The climate if further fueled by constant news reports about officers taking the life of someone without any consideration of the circumstances surrounding their action.

Those of us who spent time on the streets know life and death decisions are made in fraction of seconds. It is the second guessing after the fact that causes division among citizens. Cops for the most part take their jobs seriously and their obligations to the public as a sacred duty.

I believe attending the Baltimore Seminar is a show of support to those who stand between freedom and anarchy. I will be in Baltimore because I believe in what those dedicated Officers are doing and will continue to do. I hope to see you there.

The recent Election of Officers has been completed. I would like to thank all those who took the time to Vote for the candidate of their choice. The choice of Officers is an important part of being a member of the APA. It is the leadership and member support that charts the path to the future. We will have rocky times ahead but, with your support we will overcome our detractors and fulfill our obligations to Seek the Truth .

Remember as Professionals, we have an obligation to sharpen our skills and broaden our experience base if we are to served those who are in need.

The opinions contained herein are mine and do not represent the APA or the Board of Directors.

George H. Baranowski
Director

Insightful Thinking

"Don't dwell on the Past." How many of us have heard that recommendation – especially after something bad has hap-

pened to us? Many times we would be wise to follow that advice, shifting our focus to present and future events and goals. After all, what do you think an unhealthy obsession with past failures does to us. Yep, the word is big time depression, sorrow, and all the other stuff that goes along with that.

But like with any good advice, it shouldn't be taken the other way to extremes either. Paula has told me from time to time that I seem to be a believer in moving forward, but I equally realize the huge value of spending a short amount of time reflecting on past errors in a productive way. That's the logical approach, because it's the only way to learn from them.

I'm not talking about throwing a pity party for your poor self (and I'm saying this from experience, because I had done a bunch of things like that years ago). I'm really talking about examining failures with an eye toward future success. I'm calling this insightful thinking. It's thinking with the purpose of gaining insight and growing.

Insightful thinking allows me to process the events in my life with the purpose of improving myself afterward. By examining what worked and what didn't, I feel I'm able to better analyze events in my life, and improve myself with this insight, and push myself forward, because let's face it, if you're not pushing forward where are you going to go? Whether I was consciously aware of it or not, I know I'm always trying to get better.

Here's what I think are some of the steps in Insightful Thinking:

1: REVIEW: Look back on the events of your past. I do that sometimes weekly, sometimes daily. I look at success and failures of that previous time. I think It's a positive practice to review accomplishments, and also to look where my time was spent and what mistakes I made. You can't know what to do tomorrow until you know what you messed up today, right? As you review, ask yourself, "Where did I come up short? Where did I come out strong?" It's not a bad idea to make a list of everything that stands out, if nothing more than making that list mentally. Celebrate the wins and make note of the losses. Then move to the next step.

2. REFLECTION: I try to look at events with as much detail as I can recognize. Here are some questions to ask yourself: "What plans worked? What decisions produced good or great results? What deci-

sions ended up being wrong? If or when this kind of thing ever comes up again, what should I do differently? This makes sense, right?

3. RECOVER: When things don't turn out as planned, you may need time to recover. I've made plenty of mistakes over my close to 80-years of living. In fact, I believe strongly in this statement I've been promoting over the years, that states, "If you aren't making mistakes, you probably aren't trying hard enough." Some of our own polygraph business decisions weren't successful. Others were very successful, and some without a doubt, wouldn't have happened if we hadn't extended some risk.

I think recovery time helps bring closure. Letting myself feel bad for a short time can motivate me to fix what can be fixed. I remember a phrase I read while I was at the law enforcement academy that said, "Just remember, with every look at the past, always keep an eye toward the future." What I got out of that was "Don't constantly live in the past."

4. REORGANIZE: Insightful thinking provides me clarity about priorities. Taking a look at what went wrong may reveal where I lost sight of what was really important. Also, I can tell you that there are times that priorities need to shift. It's like hitting the pause button so I can take a look to see if I'm still on the right track. To keep pushing forward, but in the wrong direction, can develop even greater problems than necessary.

5. REVITALIZE: I feel that dwelling on the past with an eye to the future allows me to rebound. It reveals the humor in situations, and I've told a good share of jokes and stories of those events. And I think that its healthy to even laugh about some events. I've stepped back to see where Paula has helped me in so many ways regarding these events, and seeing them with a different eye that I obviously missed, and maybe even more important, is discovering steps I can take to avoid repeating mistakes. I think that revitalization is critical to growth. It expands your thinking and, Hey, that's what it's all about. This all sounds pretty logical, doesn't it?

Keep safe and I'll see you at the conference in Baltimore. And yes, you're right, that's Insightful Thinking.

Steven Duncan
Director

Fellow APA Members, I trust this Board Member Report finds our Members in good health and good spirits. With the Annual Workshop/Conference upcoming, the Board and the National Office have been busy preparing and working toward making this year's Event the best ever.

The Ethics and Grievance Committee has completed several Cases and continues to address the few Complaints received. Our Members' compliance with the By-laws and Procedures is evident considering the few Complaints received and the unfounded findings in several Cases. Work also continues on the new Policy for the Committee.

As a Board Member I have been involved in teleconference meetings and continue to represent the Members to the best of my ability. I have also assisted several Members with concerns and questions.

As always, I want every Member to know, I am available to assist in any way I can. If you want to talk with a Board Member, I will be glad to talk with you. I will take your ideas and / or suggestions forward even when I do not particularly agree. I am here to represent you.

If I can assist any Member, feel free to call or email me.

Jamie McCloughan
Director

As summer quickly is passing us by, another seminar is right around the bend. For me, there is always comfort in knowing it won't be long before I once again get to see fellow professionals and friends I have met over the years and have the great opportunity to meet new ones. So I look forward in seeing everyone in Baltimore. I want to take this opportunity to address a topic dear to my heart and then bring you up to date on the Education Accreditation Committee's work thus far this year.

My father was drafted and served as a combat medic in the Army during the Vietnam War. Growing up, I rarely recall of him speaking about it. It wasn't until recent years that he has been able to talk about some of what he went through. My father didn't come back to a hero's welcome. There were no bands playing, no flags waving, no handshakes with a thank you for your service given. There was a deep divide in our country. Too say the least, I was raised to respect authority and those who served and protected our country and the ideals it was founded on. I decided to serve my country by becom-

ing a law enforcement officer. When I joined law enforcement almost 22 years ago, things were much different. To me, there seemed to be a sense of respect for those who wore the uniform, whether military or law enforcement. Recent senseless murders of law enforcement officers and attacks on law enforcement in general throughout this nation seem to suggest that the respect is gone. Personally, I don't believe that is true. Martin Luther King Jr. said, "The ultimate tragedy is not the oppression and cruelty by bad people but the silence over that by good people." I know those protecting our freedom from the bad people will remain vigilant. So I ask that the good people reach out to them and not remain silent as we continue to make our country the great nation that it is. A simple handshake and a thank you for your service means a lot to those who give so much and ask for so little in return.

2016 has been what I call a normal work load on the inspection side of the committee. By years end, we will have inspected at least ten education and training programs seeking APA accreditation. Thus far we have successfully inspected four of the ten. This leads me to the topic of the inspectors.

At the start of the year we had four fully trained inspectors. When I say fully trained, I mean the person has attended the class to learn how to inspect an education and training program and actually conducted an inspection alongside another fully trained inspector. The four inspectors, Jarred Ball, John Galianos, Roy Ortiz, and Hector Ruiz, have all done an excellent job and most have served as inspectors since I was assigned as chair in 2012. However, Jarred had to resign at the beginning of the year in order to take on a new career. After several years of serving on the committee and being ready to go anywhere we needed him at the drop of a hat, he is and will be sorely missed.

The non-inspection side of the committee is still look into the feasibility of allowing students who attending an APA accredited program to attain college credit for their basic polygraph education and training. President-Elect Pat O'Burke has spearheaded this task and it is moving forward nicely. I will leave this topic at that, as I don't want to explain something I'm sure he will do a better job of explaining. Again, the main goal of this project is expand the education opportunities for prospective polygraph professionals and bring us more in line with other similar professions.

If anyone has a question, concern, or comment about anything I've discuss, or just in general, feel free to contact me. I'm always looking for ideas and inputs

as we move forward.

As always, may those who are fighting for our freedom against threats, both foreign and domestic, be safe, and have God-speed in their return to friends and loved ones.

BY LAWS AMENDMENT PROPOSAL

APA MEMBERSHIP LEVELS

Current

3.1 Full Member

3.1.a Full Members of the APA are those persons who:

3.1.a.i Have graduated from a basic polygraph education and training program that substantially meets the APA accreditation time of graduation;

3.1.a.ii Have completed not fewer than two hundred (200) field polygraph examinations using a validated polygraph

3.1.a.iii Have received a minimum of a Baccalaureate Degree from a college or university accredited by an accreditation board recognized by the United States Department of Education or Education Accreditation; or an equivalent degree from a college or university outside of the United States recognized educational community as meeting similar standards; and

3.1.a.iv Abide by the APA's Code of Ethics and the APA Standards of Practice.

3.1.b Full Members shall:

3.1.b.i Have the right to vote in all matters before the General Membership;

3.1.b.ii Be eligible to hold any elective office in the APA;

3.1.b.iii Be eligible to hold any appointed position in the APA and serve Chair of any APA Standing or Ad Hoc Committee;

3.1.b.iv Meet all financial obligations required of Full Members

3.2 Associate Member

3.2.a Associate Members of the APA are persons who:

3.2.a.i Have graduated from a basic polygraph education and program that substantially meets the accreditation standards of the APA in place at the time of graduation;

3.2.a.ii Abide by the APA's Code of Ethics and the APA Standards of Practice.

3.2.b Associate Members shall be eligible to become Full Members without

meeting the Baccalaureate Degree requirement provided that they meet all other requirements for a Full Member and:

3.2.b.i Satisfactorily complete an APA approved qualifying examination attesting to their knowledge of, competence in, the administration of polygraph procedures;

3.2.b.ii Have been Associate Members for not less than thirty-six (36) months;

3.2.b.iii Within the thirty-six (36) months preceding their application to become a Full Member have successfully completed a minimum of one hundred and eight (108) hours of continuing education in topics directly related to polygraph testing, including at least one (1) APA annual seminar, during the time they are Associate Members;

3.2.b.iv They are in attendance at an APA annual seminar at the time of consideration of their request for upgrading to Full Member

3.2.c Associate Members shall

3.2.c.i Have the right to vote in all matters before the General Membership, but may not hold any APA elective office;

3.2.c.ii Be eligible to hold any appointed position in the APA and serve as the Chair of any Standing or Ad Hoc Committee; and

3.2.c.iii Shall not represent themselves as any type of APA Member other than an APA Associate Member

3.2.c.iv Meet all financial obligations required of Full Members

Proposed

3.1 Associate

3.1.a Associates are those persons who:

3.1.a.i Have graduated from a basic polygraph education and training program that substantially meets the APA accreditation standards in place at the time of graduation; and

3.1.a.ii Certify they have read and are in compliance with the APA's Code of Ethics and APA Standards of Practice.

3.1.b Associates shall:

3.1.b.i Be eligible to hold any appointed position in the APA and serve as the Chair of any Standing or Ad Hoc Committee;

3.1.b.ii Shall not represent themselves as any type of APA Member other than an Associate; and

3.1.b.iii Meet all financial obligations required of Associates.

3.2 Member

3.2.a Members are those persons who:

3.2.a.i Served as an Associate for at least twenty-four (24) months immediately prior Member status;

3.2.a.ii Certify they have read and are in compliance with the APA's Code of Ethics and APA Standards of Practice;

3.2.a.iii Have completed not fewer than two-hundred (200) field polygraph examinations using a validated polygraph technique;

3.2.a.iv Within the thirty-six (36) months preceding their application to become a Member have completed a minimum of sixty (60) hours of continuing education on topics directly related to polygraph testing, including at least one
(a) APA annual seminar, during the time they an associate; and

3.2.a.v Have received a minimum of a Baccalaureate Degree from a college or university accredited by an accreditation board recognized by the United States Department of Education or the Council for Higher Education Accreditation; or an equivalent degree from a college or university outside of the United States recognized by the international educational community as meeting similar standards; or

3.2.a.v.1 Have attended at least sixty (60) hours of accredited college hours, and;

3.2.a.v.2 Have five (5) years of verifiable active full-time law enforcement experience; or

3.2.a.v.3 Satisfactorily complete an APA approved qualifying examination attesting to their knowledge of, competence in, the administration of polygraph procedures;

3.2.b Members shall:

3.2.b.i Have the right to vote in all matters before the General Membership;

3.2.b.ii Be eligible to hold any elective office in the APA;

3.2.b.iii Be eligible to hold any appointed position in the APA; and

3.2.b.iv Meet all financial obligations required of Members.

*** All "Full Members" will have their membership status changed to "Member" upon approval of this motion by the general membership.**

**** "Associate Members" with two or more years of membership who demonstrate compliance with the above "Member" requirements will have their membership status changed to "Member" upon approval of this motion by the general membership.**

***** "Associate Members" who do not meet these requirements upon approval of this motion by the general membership will have their membership status changed to "Associate."**

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Letter to the Editor

Ten APA Past Presidents

The majority of the APA Board has voted to place before the membership at the 2016 APA seminar a proposal to change the By Laws that we believe is ill-advised and contrary to the direction which the Association ought to be taking. We encourage all APA members to vote against this change.

The proposed change would exempt law enforcement personnel with five years of experience from the 4-year college degree requirement currently necessary for Member status. It would remove the requirement to pass a written examination to upgrade from Associate to Member (previously called a Full Member.) and because of how the provision is drafted the exemption would apply only to law enforcement personnel. In effect, it substitutes five years of "police" experience for a 4-year college degree.

As APA members may know, the major difference between an Associate Member and Member is that the latter requires a 4-year degree. However, an Associate Member may still move to Member without a degree by taking a written exam to demonstrate polygraph knowledge, holding APA membership for 3 years, and attending an APA seminar. It has been a goal of the APA since the 1960s when it was first organized to have all members hold college degrees. The college requirement in the current By Laws, designed to promote educational attainment, does

not, contrary to what some seem to believe, pose a barrier to Associate Members who want to upgrade to Member status; many Associate Members have taken advantage of this opening by simply taking and passing the APA's written exam.

The undersigned APA Past Presidents believe the proposed amendment is damaging to the Association, its members and its aims. First, the proposal runs contrary to the goal of encouraging educational achievement for all professional examiners, and replaces it with a time-in-job standard. If the proposal is successful, it would undo the efforts of previous APA Boards over the past 50 years to increase the educational qualifications of the membership. Second, the exemption would allow five years of employment as a police officer, with no regard to the types of assignments the officer may have had, to substitute for a college degree. Finally, and perhaps most damning, the language of the proposal is specifically crafted to benefit only one sector of the Association, and it is therefore unfair and divisive. It should be defeated.

We encourage those who plan to attend the General Membership Meeting during the 2016 APA Seminar in Baltimore to vote down the proposed change to the By Laws. The proposal would set the Association on a course away from education and toward on-the-job experience, a direction not pursued by any modern day professional association. We ask the membership to join us in defeating the proposed change to the APA By Laws.

Frank Horvath, APA President, 1991-1992
Steve Bartlett, APA President, 1995-1997
Dick Keifer, APA President, 1997-1998
Skip Webb, APA President, 2000-2003
Jack Consigli, APA President, 2003-2005
Don Krapohl, APA President, 2006-2007
Donnie Dutton, APA President, 2007-2008
Dan Sosnowski, APA President, 2009-2010
Nate Gordon, APA President, 2010-2011
Pam Shaw, APA President, 2011-2012

Polygraph Examiner / Detective Helps Save a Life

ALLENTOWN — Bill Williams was combing the beach with his family on July 22 at Assateague Island National Seashore in Virginia when his wife noticed a commotion in the surf nearby.

Marade Williams said she saw a man, who moments earlier had been cavorting in the waves with his wife and daughter, collapse into the knee-deep water where the breakers rolled up on the beach. His wife was struggling to lift him out of the water, she said.

Trained in CPR and first aid as a police officer and former Army medic, Williams rushed with lifeguards to pull the stricken man from the water. He said the lifeguards' quick reaction, their teamwork and the availability of an automated external defibrillator prevented a tragedy.

"When we first brought him out, the guy was just dead," Bill Williams said.

Williams said he grabbed the 59-year-old man under his left arm and helped the lifeguards carry him to dry sand. They immediately determined the man wasn't breathing and had no pulse, so they began CPR.

As one of the lifeguards began chest compressions, Williams tilted and lift-

ed the man's head to open his airway. When other lifeguards arrived with medical equipment, Williams administered oxygen and the lifeguards attached an AED.

After the machine delivered a shock in an attempt to restart the man's heart, it gave the rescuers instructions to continue CPR before a second attempt. After a second shock, the machine didn't detect a heartbeat, so Williams and the lifeguards continued CPR.

Marade Williams, meanwhile, was standing nearby with the couple's 17- and 10-year-old daughters and 8-year-old son. She noticed the man's wife standing, watching helplessly alone.

"Of all of the people who were there watching, no one could go up to the woman," Marade Williams said. "I think they were afraid to go up to her because they feared the worst."

Marade Williams walked over to her, put a hand on her shoulders and just prayed, she said.

"I have to think God had his hand on all of us that day," she said. "God put all the right pieces into play."

Shortly after Bill Williams and the lifeguards began a third round of CPR, the man began breathing again with a gasp. The lifeguards felt his pulse return. By the time he had been loaded into an ambulance, he was conscious and speaking to medics, Williams said.

Williams said he called the hospital Saturday trying to find out the man's condition. Although a nurse couldn't tell him anything, she gave his phone number to the man's wife who called that evening.

The woman told Williams the couple is from Cleveland and was visiting Virginia with their 13-year-old daughter. Although they didn't know what caused the man, whom Williams knows only as John, to collapse, he was doing well and was on track to be released from the hospital Sunday.

For the Williams family, who vacation in nearby Chincoteague, Va., each year, the rescue on the beach at Assateague Island will be something they remember for the rest of their lives, Bill Williams said.

Source

http://www.mcall.com/news/breaking/mc-allentown-police-officer-saves-man-on-beach-20160724-story.html

By Said R. Khamzin and Sergey Aleskovskiy

Polygraph was introduced in the Republic of Kazakhstan in the 2000s. However, active use of a polygraph instrument started after the foundation of the Almaty Polygraph Association on July 1st, 2008. It became the first organization for polygraph professionals in the history of Kazakhstan. Since then, 1st of July became official anniversary of Kazakh polygraph.

In 2012 the Association was renamed to Eurasian Polygraph Association. The Association has its members from Kazakhstan, Russia, Belarus, Bulgaria, Poland, the United States of America, Ukraine, Kyrgyzstan, Azerbaijan, Mongolia and Uzbekistan.

Today polygraph is widely used by all state law enforcement agencies, intelligence and security services of Kazakhstan. According to the Act "On Operational-Investigative Activities," use of polygraph is possible and even necessary in order to improve the efficiency of operational-investigative activities. Article 11 of the Act defines the interview as one of the other general operational-investigative activities and polygraph falls into this definition as a special type of interviewing by means of technical equipment.

On May 21st 2013, the Act "On Law Enforcement Service" was amended, following regulations regarding the use of polygraph were added:

1. Regarding applicants for the law enforcement agencies of the Republic of Kazakhstan. Art. 6, par. 5: "For citizens who wish to serve in law enforcement agencies, it is mandatory to determine their medical and psychophysiological suitability for the service and to undergo an evaluation by military physician board and take a polygraph test. Those who

wish to serve in the Anti-Corruption Agency must take a polygraph test, which is held in a corresponding department of the Authority on Public Service Affairs and Anti-Corruption".

2. Regarding law enforcement officers during efficiency evaluation - Art. 47 par. 5, pp.3-1: "Staff Certification includes a series of sequential steps: ... taking a polygraph test."

3. Regarding law enforcement officers under the internal investigation - Art. 58 par.1: "... If necessary, during the official investigation a polygraph test is conducted."

On June 19th, 2014 "The Rules of Polygraph Examination in Law Enforcement Agencies of the Republic of Kazakhstan" were approved. The rules determine a polygraph testing procedure for those who join law enforcement agencies, as well as law enforcement officers during routine and special evaluations.

Every year several hundreds of agency-level polygraph examiners conduct over 30.000 polygraph tests.

Unfortunately, the legislators did not develop regulations on polygraph use in court proceedings and on polygraph use as a type of forensic examination. Polygraph use in the mentioned areas is still anecdotal. For instance, in 2015 there were no more than 20 such cases.

Commercial polygraph is widely used in Kazakhstan. Most major banks have full-time staff polygraph examiners, sometimes more than one examiner. Largest trading and extractive companies either have a polygraph examiner as a staff member or have a contractor from Eurasian Polygraph Association. Polygraph is commonly used during internal investigations. More than 50 examiners are employed in this area, conducting on average from 30 to 100 examinations per year each.

Polygraph examinations are conducted in many cities of Kazakhstan: Almaty, Astana, Chimkent, Petropavlovsk, Aktobe, Karaganda and many others.

Polygraph examiners from Kazakhstan use Russian-manufactured polygraph instruments and equipment, such as "Diana", "Chris", "Energy", as well as American-manufactured instruments and equipment, such as "Axiton" and "Lafayette".

For over a decade Kazakhstan has its own polygraph examiner training program. The program is a part of the Eurasian Polygraph Association Training Center. Instructors are experienced Kazakh polygraph examiners, such as S. Aleskovskiy, A. Gaydamashev, B. Baysahalov, M. Milshtein and others. As of today, more than 400 students had completed a training course and dozens had completed an advanced

course for polygraph examiners. In March and April of 2013, 20 police officers from Mongolia had completed a full training course which was held in Ulan-Bator. A training course for polygraph examiners of the State Personnel Service of the Kyrgyz Republic was conducted in Bishkek by the instructors of the Training Center.

In April of 2016 the International Scientific-Practical Conference "Polygraph in Kazakhstan: Current Issues and Development Prospects" was held in Almaty. More than 50 polygraph examiners, law enforcement officers, scientists and polygraph equipment manufacturers took part in the conference. Professionals from Kazakhstan, Russia, Poland, Bulgaria, Belarus, Ukraine and Kyrgyzstan shared their knowledge and experience.

The speeches focused on the following problems of applied psychophysiology:

- Theoretical and methodological aspects of the polygraph use;
- Polygraph examination practices;
- Psychology of polygraph tests;
- Legal issues of polygraph use.

In the spring of 2017, the Eurasian Polygraph Association will hold an international conference in the capital city of Astana. Polygraph professionals from the USA, Russia, Europe and from former Soviet Republics will be invited to take part.

In August 2015, a group of polygraph examiners from the Eurasian Polygraph Association participated in the 50th Seminar of the American Polygraph Association in Chicago.

Polygraph is successfully used in Kazakhstan. In 2015 law enforcement agencies and special intelligence services of Kazakhstan provided their departments with at least 75 new polygraph instruments of different models. 168 polygraph examiners for different law enforcement agencies were trained in the Eurasian Polygraph Association Training Center.

A new professional qualification of a polygraph examiner is now officially recognized in Kazakhstan.

Courts of different levels now take polygraph examination reports into consideration during court trial. Attorneys of suspects and accused persons use polygraph examinations to obtain additional evidence of their client's in-

nocence in crimes.

However, development of polygraph in Kazakhstan faces many problems, some of them are:

- There is no free competitive market of polygraph manufacturers in Kazakhstan. A number of officials from the law enforcement agencies openly lobbying for a single model of the polygraph instrument;

- Kazakhstan is flooded with unqualified polygraph examiners, who had only completed a weekly express training courses, often external courses;

- Law enforcement authorities do not spend financial resources on training and advanced training of their polygraph examiners. It results in a decrease of quality and accuracy of polygraph examinations results;

- The Ministry of Justice of Kazakhstan does not take any actions to introduce polygraph for the use during court proceedings and as a new type of forensic examination.

However, even with the existing issues, it cannot be disregarded that the speed of implementation of the polygraph use in Kazakhstan today is considerably far ahead of neighboring countries in Central Asia.

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Using the Lafayette Respiration Line Excursion Tool

Raymond Nelson
Lafayette Instrument Company

Pneumograph data, combined with data from other recording sensors, can be an important and useful source of information about deception and truth-telling during polygraph testing. Respiration data can also be a rich source of information about changes in behavioral cooperation and posture during testing, and may also be affected by physical conditioning and factors related to health.

Respiration data are sufficiently complex that human experts do not attempt to numerically quantify much of the information they interpret. Instead, visual interpretation of pneumograph data remains in some ways qualitative. Quantitative interpretation of respiration data is generally limited to the identification of reduction of respiration activity in response to the test stimuli. Reduction of respiration activity has been shown to be correlated with deception (Kircher & Raskin, 1988; Raskin, Kircher, Honts & Horowitz, 1988; Podlesney & Truslow, 1993; Harris, Horner & McQuarrie, 2000; Kircher, Kristjiansson, Gardner & Webb, 2005; Kircher & Raskin, 2002). Visual pattern recognition approaches to the quantification of respiration data - which rely heavily on the knowledge, skill, training, and experience of human examiners - can produce only suboptimal levels of reliability. Computational methods for pneumograph feature extraction – which can provide automated reliability – have involved the actual measurement of the change in vertical excursion of the plotted respiration data. This measurement has been called *respiration excursion* and is the computerized allegory for the *respiration line length* measurements that were developed for manual measurement of plotted polygraph data on rolled paper chart output from pre-computerized analog polygraph instrumentation.

Introducing the Respiration Line Excursion Tool

Figure 1 displays the LXSoftware preferences setting that can be used to enable the *RLE Tool*. Figure 2 displays a segment of pneumograph data from a comparison question polygraph test, including the upper and lower respiration sensor data, along with the abstracted tracing from the *RLE Tool*, showing the relative change in respiration activity for each test stimulus. The change in vertical activity includes information about both the degree of change with each inhalation/exhalation cycle along with information about the rate of change during the measurement period.

Using the Lafayette Respiration Line Excursion Tool

Figure 1. LXSoftware preference setting for the RLE Tool.

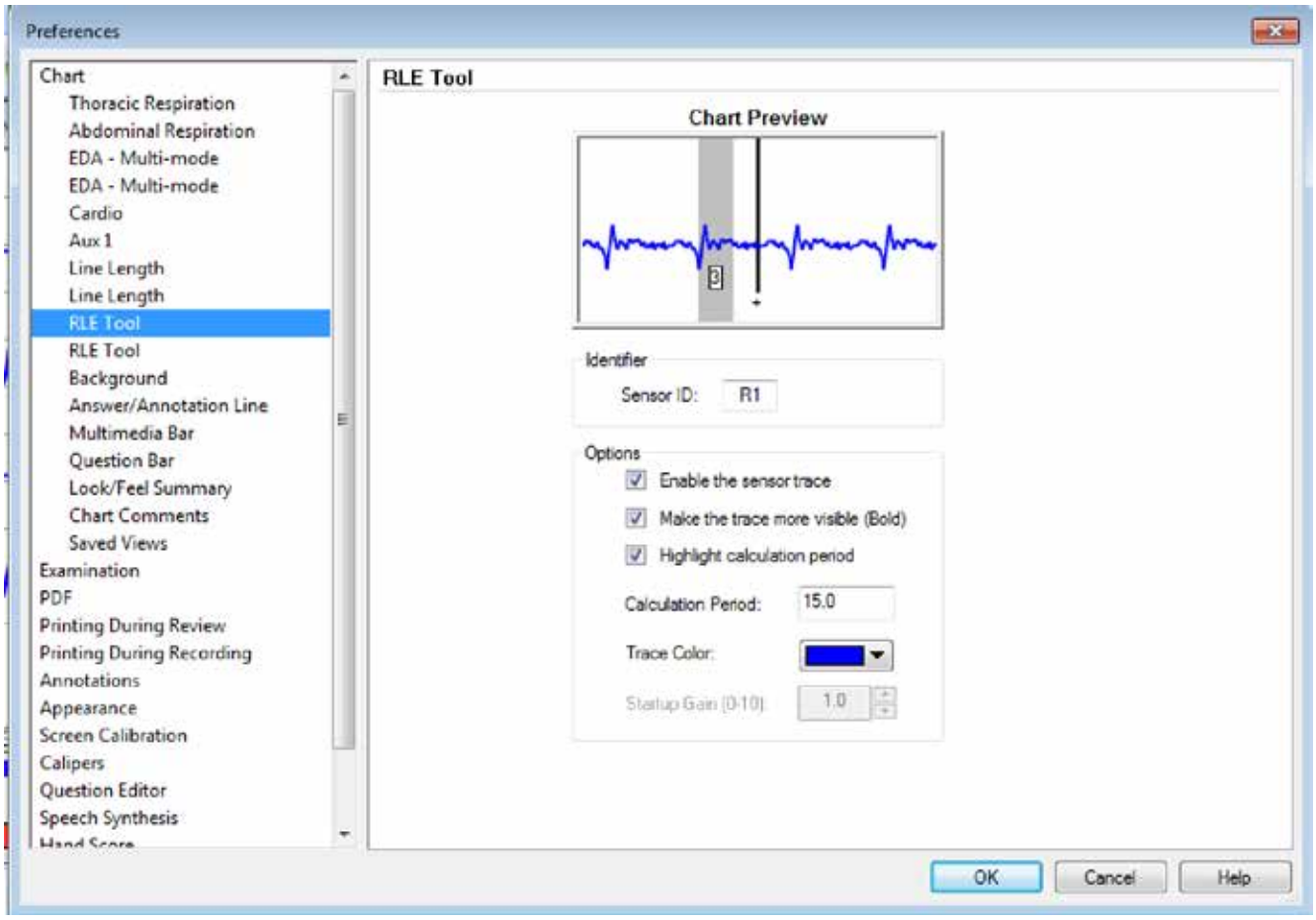
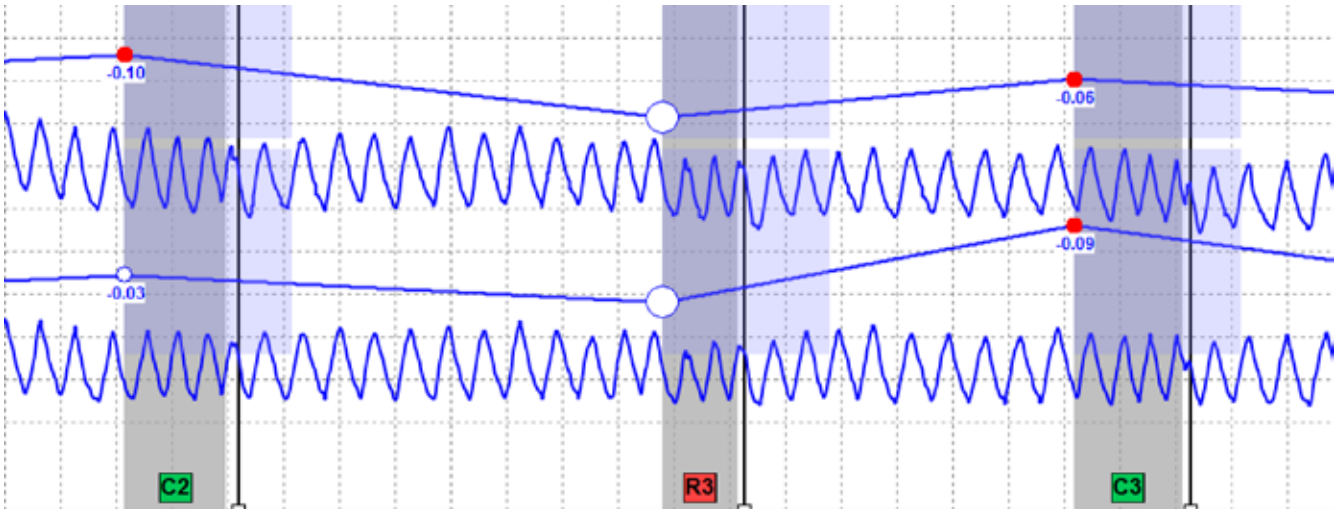


Figure 2. Pneumograph data with RLE Tool.



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Using the Lafayette Respiration Line Excursion Tool

The important difference between *respiration excursion* and *respiration line length* is that line length measurements will include both vertical changes that are indicative of physiological activity and horizontal changes that is independent of physiology and are influenced only by the design of the polygraph data machine, whereas excursion measurements include only vertical changes that are indicative of physiological activity.

Greater or lesser changes in physiological activity are shown by an *RLE Index Point* - at the onset of each stimulus question - at a higher or lower vertical position at the onset of each stimulus question. The RLE measurement itself is made in digital units. The *RLE Score*, shown on the displayed polygraph chart, is a dimensionless score that is calculated using the respiration excursion length of selected question compared to the other questions. Dimensionless values have no physical units of measurement (i.e., they are cancelled out algebraically when calculating the *RLE Score*) and are useful because they give a stable and consistent numerical values that remains intuitive and easy to understand even when the physical size of the plotted and displayed data is enlarged or reduced.

The *RLE Score* is calculated as the logged ratio of a selected stimulus question compared to the other questions. The advantage of using a logged ratio is that the RLE Score is more easily conforms to traditional polygraph intuition in a positive *RLE Score* is a potential candidate for a positive *Numerical Score,* and RLE Score less than zero is a potential candidate for a negative *Numerical Score*. Positive numerical scores, in traditional polygraph analysis models, are correlated with truth-telling while negative scores are correlated with deception. This differs from the more general scientific use of the terms *positive* and *negative* when applied to the test result itself, wherein positive results are indicative of the positive state or presence of a condition being tested while negative results are indicative of negative state or the absence of a condition.

How to use the RLE Tool

Using the RLE Tool is simple, involving only two steps: 1) click on the relevant question that you wish to score, and 2) observe the *RLE Score* at the comparison question. The *RLE Index Point* for the selected questions will be colored white and will be larger than the *RLE Index Points* for the other questions. Selecting each different relevant question will result in the recalculation of all displayed *RLE Scores* because the selected question is compared to all other test stimuli. There will be no *RLE Score* at the selected question because there is nothing useful about comparing the RLE measurement to itself. Also note that clicking on any question will result in the re-calculation of the *RLE Scores* for the selected question compared to each of the other questions.

In addition to the calculation of an *RLE Score, the RLE Tool* will also make a recommendation for a *Numerical Score*. This recommendation is illustrated by the color of the RLE index point at each comparison question. A green *RLE Index Point* at a comparison question indicates a recommendation for a positive *Numerical Score* for the selected question. A red *RLE Index Point* at a comparison question indicates a recommendation for a negative *Numerical Score* for the selected question.

In order to optimize the diagnostic coefficient of recommended *Numerical Scores*, and to reduce the occurrence of erroneous score recommendations that might result from artifacts such as deep breath or physical movement, some constraints are imposed on the *RLE Score* when recommending a *Numerical Score*. Negative *Numerical Scores* are recommended when the RLE Score is between -.0488 and -.4055. These coefficients correspond to linear ratios of 1.05 and 1.5. Positive Numerical Scores are recommended with the *RLE Score* is between +.2231 and +.4055, corresponding to linear ratios of 1.25 and 1.5. The recommended *Numerical Score* will be zero (0) when the *RLE Score* is outside these constraint coefficients. These constraint

coefficients have been found to optimize the correlation coefficient of the recommended *Numerical Scores* while minimizing scoring errors.

At this time, the *RLE Tool* is not intended to replace the expertise of the polygraph field examiner, and the examiner must select the correct comparison question for each relevant question. Selection of the correct comparison question is determined via a number of possible variables including combination of the position of the relevant question, the relative change in physiological activity for different comparison questions, and the existence of data artifacts that hinder the use of a data segment. It remains the role and responsibility of the examiner to select the correct comparison question for each relevant question and to combine the upper and lower respiration data into a single respiration score.

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New Research Contradicts Basis For Ban-The-Box

By Stanley M. Slowik

A review of Ban the Box, Criminal Records, and Statistical Discrimination: A Field Experiment, Agan, A. and Starr, S. in the University of Michigan MICHIGAN LAW, No. 16-012, June, 2016.

As detailed in American Polygraph Association publications over the last several years (Slowik, 2012, 2015, 2016), Ban-the-Box (BTB) is the practice that prohibits employers from seeking recent, work related information about job applicants' criminal history and activity, in most cases, until after Conditional Offer of Employment (COE). Currently, 23 states and over 100 other government agencies have endorsed the restrictions, most recently, the Office of Personnel Management (OPM), which, on the basis of a new Executive Order, has now extended the ban to all federal employers (ibid,2016). The original contention by BTB initiators that the significant statistical gender and racial disparities in criminal conviction rates was somehow the result of systemic sexism and racism within law enforcement and the criminal justice

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system is unsupported by any credible research. More importantly, the federal courts have recently concluded that the Equal Employment Opportunity Commissions position that sexism and racism account for the statistical disparities in criminal activity to be "laughable, distorted, cherry-picked, worthless and an egregious example of scientific dishonesty". Now, a new study conducted at Princeton University and the University of Michigan with contributions from some of the most respected American research universities, finds the basic premise that delaying access to job applicant criminal conviction records improves employment chances to be false. In fact, the study found precisely the opposite: employers with open record access have a significantly lower racial disparity in positive call backs to submitted job applications. NOTE: Because the study used the appellations white and black, those terms are used in this review.

Ban the Box, Criminal Records, and Statistical Discrimination: A Field Experiment used an experimental setting and a randomized design to eliminate non-racial variables that might influence results of 15,000 on-line job applications for fictitious white and black male candidates so identified by using first and last names historically documented to be used by white and black males born 21 to 22 years previously. The applications were all submitted to actual, for profit, private employers in New Jersey and the City of New York before and after those governments enacted BTB laws. The researchers then studied the call back rates, defined as requests for the applicant to contact the employer or schedule a pre-employment interview, between whites and blacks, before and after BTB. Contrary to BTB advocate claims, the study found that prior to BTB, black applicants with felony conviction records actually had a slightly better call back rate (10.2%) than white applicants with felony conviction records (8.4%) but after BTB, the direction of disparity reversed and the significance of disparity had a dramatic, negative effect on black applicants with felony conviction records with the whites receiving 7% more call backs, increasing the racial gap to 45%, whites over blacks, with BTB in place.

There are several important study design choices that should be mentioned before discussing the speculated causes for the negative effect of BTB on black applicants with felony conviction records.

First, this is an experimental study

using fictitious job applicants, albeit, applying to real employers. However, the positions being sought were all low wage, unskilled, entry level jobs with no or minimal educational and experiential requirements. All the applications were made to private sector employers in New Jersey or New York City, primarily in the retail industries (fast food, service stations, etc.) with the exception of the motel/hotel industry. As the authors themselves report, nearly all BTB laws exclusively effect only public employers and even those few private sector jobs that are exempt from the Employee Polygraph Protection Act have some meaningful job requirements. Most incredibly, the study report notes that they were surprised to discover that over 60% of the employers they choose for the study never requested information about criminal conduct before or after BTB laws were enacted. While this lack of concern about criminal activity may be true for the low skill retail jobs, it is not true for low skill motel/hotel jobs. Within the latter employment sector can be found some of the most notorious precedent setting Negligent Hiring case law concluding that employers need criminal record checks and more to reduce liability. The researchers justify this study design choice by maintaining that they wanted to select jobs that were already well populated by black males in order to eliminate unknown non-racial effects.

Secondly, the researchers choose to limit the criminal convictions to only "minor" felonies, further limited to minor property crimes (shoplifting, not carjacking) and minor drug offenses (possession, not sale or distribution). In addition, the researchers further qualified their "felonies" to single offenses for which the applicant did no time. These are hardly the kinds of crimes with which employers who conduct evaluations of criminal behavior, are concerned. Notably absent from consideration are felony convictions for crimes of violence: sexual assaults, armed robbery, domestic violence, etc.).

Third, there appears to be a profound liberal bias in both the terms used to discuss issues and issues that are omitted from discussion. For example, the report refers to "statistical discrimination on the basis of race" and "racial discrimination" when referring to what is normally (and legally) called a statistical disparity or disparate impact. Criminal records are referred to as "major barriers to employment" or "an obstacle to employment" as if

the evaluation of work related criminal activity was a contrivance for racial discrimination and not of Business Necessity. Female job applicants are completely omitted from the study though not from the BTB laws even though gender disparities with regard to felony conviction records are much greater and insidious than racial disparities, albeit in the wrong politically correct direction.

Fourth, the psychological theory behind BTB, that employers will not disqualify applicants with work related criminal histories after the Conditional Offer because "Rejection is harder once a personal relationship has been formed" (Love, 2004) lacks any support in reality, assumes employers will ignore their own hiring standards and contradicts numerous federal and state employment laws mandating consistent, equal treatment and practice. The only group of applicants likely to benefit from this highly subjective approach might be confidence men with work related felony records who can talk their way past the hiring decision maker.

Fifth, the assumption that employers will know the race of the applicant from the name or even bother to look at the name, is tenuous at best. As the researchers themselves note, only 50% of male names have a statistically significant difference. Further, many online applications, particularly those used by larger, multi-location employers of the type selected in the study, use computer analysis and are not reviewed by an actual person. The researchers noted that some of their applications were rejected because the employer's computer programs spotted the fake Social Security numbers used in the submissions. Finally, for the applications that were actually reviewed by a person, the reviewers' race is unknown as is the reviewers' predisposition toward racism.

Essentially, the researchers maintain that all of their study design choices were intended to isolate non-racial influences on results, in-effect, to enhance the benefits of BTB on black, male applicants with felony conviction records. What appears to be completely lacking in both the study design and discussion is the reason why both public and private employers feel the need to evaluate criminal activity or why so many federal and state licensing agencies require a criminal record check as a prerequisite to obtaining a government issued license sometimes required for employment. Rather than a pretext for gender and racial discrimination,

evaluation of past criminal activity attempts to predict what an applicant will do, particularly with regard to work place violence and integrity related issues that affect organization operations, productivity, reputation and the safety of its employees and customers. Criminal record checking is but a small part of the process and not as effective as information developed from interviews and pre-employment polygraph examinations focused on criminal commissions, not just convictions. Criminal conviction records require that the applicant first have been caught then have the committed crime minimized through the process of charge and plea bargaining. Predictions of future work related conduct are far more accurate when based on what the applicant actually did, not what the record indicates was pled. There is no mention in the study of how BTB laws that delay evaluation of criminal activities until after the Conditional Offer of Employment are in direct opposition of the federal Buchanan and Leonel decisions (Buchanan, 1996; Leonel, 2005). Further, the researchers fail to mention how dragging out the process effects selection opportunities when competing with organizations who do not have to comply with BTB laws.

Unfortunately, the issues created by the study design selections clearly make generalizations to public sector jobs with meaningful qualification standards very difficult particularly for jobs where integrity, work place violence, safety and productivity effected by substance abuse are relevant.

Speculated Causes for Results

The researchers speculate that the most likely cause for the study results – that black male job applicants with minor felony records have a significantly reduced chance of getting a job because of BTB than their white counterparts – is based on racial stereotyping. Specifically, since the employers might be able to deduce the applicant's race from their name but would not have any information about felony convictions, they would assume probabilities about serious, felony criminal activities based upon negative group stereotypes, in this case, regarding black males. The researchers correctly point out that while such probability stereotyping is illegal, it is virtually impossible to prove. In short, the researchers point out that in the open record (before BTB) situation, employers could see the felony and make a determination of relevance whereas, after BTB, they

presumed that black males are more likely to have a felony conviction record and that the felony is both serious and relevant to employment. The report notes that although illegal, criminal record stereotyping is rational since all criminal justice data bases clearly show this significant statistical racial disparity. What the report fails to mention, however, is that the same data shows even greater statistical disparities in favor of women and that, in reality, males and specifically black male are convicted of serious felonies, particularly crimes of violence, far more often than any other group. As discussed in previous APA articles, the gender disparities appear to have a physiological basis: testosterone. Recent empirical research correlates risk taking with testosterone and, by extension, concludes that criminal activity, particularly involving violence, being risky, has a clear and demonstrable male bias. All of the theories attempting to explain the statistical racial disparities among males have either been disproven (racism, socio-economic motives) or lack support (the fatherless family, lead poisoning, etc.). Nevertheless, because black males commit felony crimes (both minor and serious) more often than any group, they wind up being convicted more than any other group. If BTB advocates truly want to improve employment opportunities for black males, finding solutions to reduce the criminal commission rate for black males rather than falsely attributing it to systemic racism might provide relief. The researchers, however, propose a very different solution: prohibit employers from obtaining the name of the applicant. Under these conditions, employment evaluations of all applicants, not just the 50% of applicants whose race might be inferred by their name and the number of actually reviewed by a person, would find that verification of their employment histories, motor vehicle records, I-9 citizenship and work permit requirements, etc. much more difficult, if not impossible. Finally, since employers who consider the evaluation of recent, work related criminal activities relevant and reward applicants not engaged in criminal activities by considering them further for employment, BTB sends the message that non-criminal behavior is not valued. Worst of all, assuming the same hiring standards are applied to all applicants for the same job – without regard to race or gender – BTB only gives applicants who do not meet the standards false hope since they will still be disqualified when the employer is eventually allowed to evaluate work

related criminal conduct.

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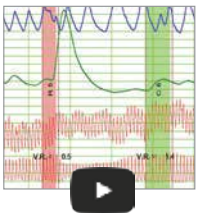

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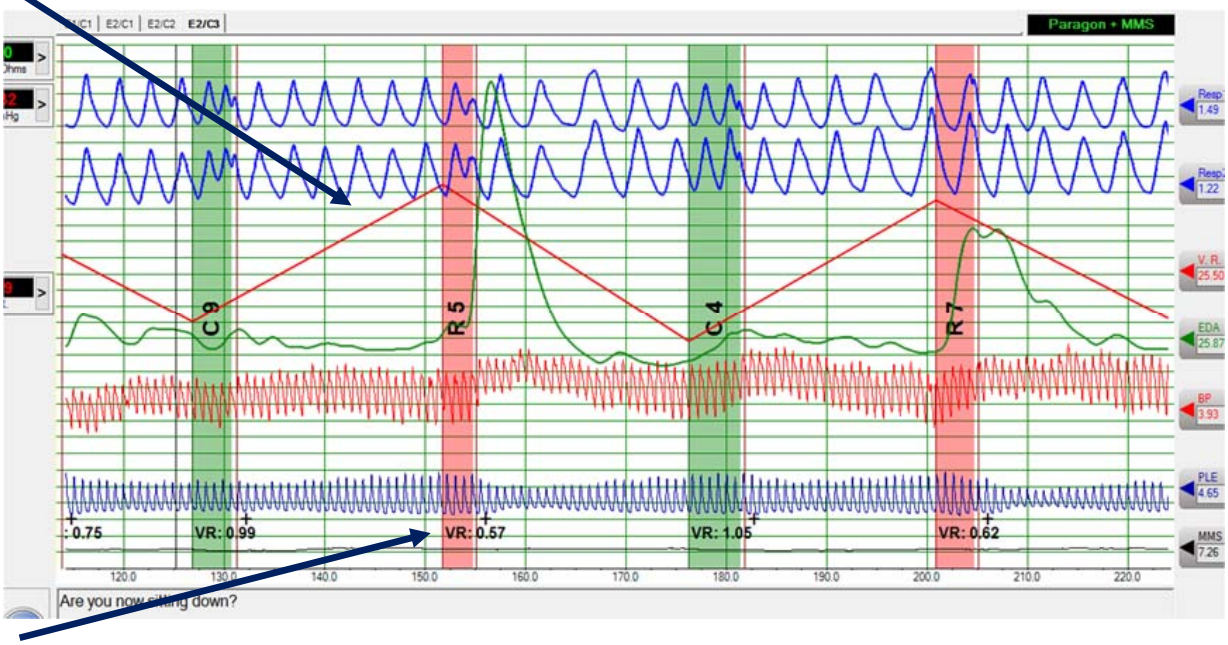
Examiners using Limestone's PLE/PPG finger sensor can be confident of our solution provider's reputation. Nonin Medical is recognized as the "the inventor of finger pulse oximetry" Nonin's clinically-proven PureSAT pulse oximetry technology utilizes intelligent pulse-by-pulse filtering to provide precise oximetry measurements — even in the presence of motion, low perfusion or other challenging conditions. By reading the entire plethysmographic waveform, PureSAT signal processing pre-filters the pulse signals to remove undesirable signals and advanced algorithms then separate the pulse signals from artifact and interference. PureSAT automatically adjusts to each patient's condition to provide fast and reliable readings examiners can trust. Limestone's algorithm calculates and displays the degree of suppression in vasomotor activity using the following method:

- Capture 3 seconds of vasomotor response immediately prior to the stimulus onset for each question presented.
- Begin capturing vasomotor activity 5 seconds after stimulus onset for a period of 5 seconds.
- Assign a value of "1.00" for no difference between pre-stimulus and stimulus suppression values.
- Assign descending values (lower value) for higher degrees of suppression than the pre-stimulus average.
- Assign increasing values (higher value) for tracings that are larger than the pre-stimulus data.
- Display those ratio values numerically and visually directly above each question of interest.

Visual indicator of relative magnitude of vasomotor reactions.



Numeric Vasomotor Reaction Ratio Tool

Limestone's methodology and algorithm conform to current research and recommended methods for collecting and evaluating PLE/PPG tracings. In addition to peripheral vasomotor activity, Limestone also uses the Nonin PLE to collect and display oxygen saturation (O2) during chart recording/data collection.

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- Comprehensive and easy to interpret numeric ratios of vasomotor reactions on each question of interest.
- Dedicated channel marker that visually displays the relative magnitude of suppression for each question presented in an easy to interpret line for visual comparison.
- Highly accurate assessment between comparison and relevant questions.
- Conforms to current recommended methodologies for collecting and evaluating PLE data.

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Five Minute Science Lesson: Statistical Confidence Intervals and Point Estimates

Raymond Nelson

Confidence intervals are used in inferential statistics to describe an interval estimate, in contrast to a point estimate, for an unknown population parameter. The purpose of any scientific test or experiment is to measure or quantify some phenomena that cannot be subject to either perfect deterministic observation or direct physical/linear measurement . Perfect deterministic observation would be immune from any influence from human behavior or random variation, while direct physical/linear measurement requires both a physical substance and a physical unit of measurement. Tests achieve the goal of quantifying amorphous phenomena through the use of statistical measurement and the use of proxy data signals that are correlated to the phenomena of interest though they are not themselves the phenomena of interest. Very often a single proxy signal will provide only an insufficient level of precision, instead multiple proxy signals are often combined to increase or optimize test performance.

Adding additional data can potentially increase the effectiveness of a testing model, as long as the additional data is itself sufficiently correlated with the phenomena of interest, is not redundant with other data, and can be combined in an optimal structural model with the other proxy signals. The effectiveness of a scientific test depends on the structural combination of the proxy data, the representativeness of the normative or reference sample, the structural or statistical combination of

the different signal data. Ultimately, because test data are not themselves the phenomena of interest, all test results are statistical estimations of the phenomena of interest.

All scientific test results are probabilistic approximations, for which there is no realistic expectation of 100% accuracy. Scientific tests are not expected to be infallible. Instead, scientific tests are expected to quantify the level of confidence or margin of uncertainty that can be realistically and reproducibly assigned to a conclusion.

Reproducibility is among the most important objectives for any probabilistic test result and scientific conclusion. However, because scientific tests are not deterministic, and are subject to potential influence from random variation and from human behavior, some normal variation is expected for all scientific test results. Reproducibility goals therefor involve the calculation and estimation of the expected range of normal variability, within which a result or conclusion can be reasonably expected to be observed for a desired portion of experiments or trials. That range of normally expected variability is referred to as the confidence interval, often expressed as the 95% confidence interval though any desired percentile range can be used.

Population parameters and sample statistics

A parameter is a number that describes a measurable characteristic of a population. A population consists of all members of a group. In contrast, a statistic is a number that describes a measurable characteristic of a sample group. A sample is a subset of a population. It is often not realistic to attempt to study an entire population, and many scientific studies involve sample groups instead. Knowledge gained from a sample, and insights about the sample group characteristics, can be representative or informative of the population if the sample is selected randomly (i.e., wherein every member of the population as an equal chance of being included in the sample). Of course, knowledge and insights gained from samples based on non-random sampling methods can be expected to provide biased or misleading information about the population. The tradition of frequentist inference is the practice of gaining knowledge from a sample group based on the proportions or frequencies of observable characteristics

Point estimation and interval estimation

Interval estimation, first described by Neyman (1937), involves the calculation of an interval of possible or likely values of an unknown population parameter based on sampling data. In contrast, point estimation is the calcu-

lation of a single value, a statistic, that is used as a best guess regarding an unknown population parameter. For example, a sample mean can be used an as a point estimate for an unknown population mean.

Confidence intervals can also be calculated for sampling proportions of correct classification. For example, the effectiveness of credibility assessment tests such as the polygraph test can be described using confidence intervals. Table 1 shows the criterion accuracy for event specific polygraph techniques that satisfy the American Polygraph Association requirements for evidentiary testing, as reported in the meta-analytic survey of validated polygraph techniques (American Polygraph Association, 2011), including the means, standard errors, and 95% confidence intervals.

Effective development and use of scientific tests can be thought of as an optimization problem, which can involve either the maximization of a goal such as the correct classification of deception and truth-telling, or the minimi-

Table 1. Criterion accuracy of evidentiary polygraph techniques (APA, 2011) including proportional means (standard errors) and {95% confidence intervals}.

Unweighted Average Accuracy	.921 (.028) {.865 to .977}
Unweighted Average Inconclusives	.088 (.030) {.029 to .147}
Sensitivity	.699 (.053) {.596 to .802}
Specificity	.717 (.055) {.610 to .824}
FN Errors	.063 (.035) {.001 to .130}
FP Errors	.059 (.037) {.001 to .131}
D Inc	.091 (.041) {.010 to .172}
T Inc	.086 (.044) {.001 to .173}
PPV	.927 (.036) {.856 to .999}
NPV	.915 (.043) {.830 to .999}
D Correct	.917 (.039) {.841 to .993}
T Correct	.925 (.040) {.846 to .999}

zation of costs associated with errors such as false-positive or false-negative classifications, or both. With optimization problems it is often the worst case scenario that is of greatest usefulness. This will mean paying attention to the lower limit of the confidence intervals for correct classifications, and the upper limit of the confidence intervals for test errors. Confidence intervals, because they express a range of likely values for an unknown population parameter, are inherently more reproducible and more generalizable than point estimates.

Whereas the means of sampling proportions can be taken as a point estimates, confidence intervals can provide information that is much more generalizable and therefore more useful. This is because sampling statistics cannot perfectly represent an unknown population parameter. In the strictest sense, point estimates based on sampling data are always incorrect and not generalizable. Sampling statistics are not expected to precisely or perfectly indicate the unknown population parameters, and some variability is expected when observing or comparing results from different random samples. In other words, different random samples drawn from the same population can be expected to have different values for the sampling mean.

Standard errors

The measurement of variability for sampling statistics is referred to as the standard error (SE) of a sampling statistic, or the standard error of the mean estimate (SEM). Standard errors for sampling statistics are similar to standard deviations for the values of a population. Whereas a standard deviation describes the variability of the members of a population, a standard error describes the variability of a sampling statistic. With many samples we will can construct a distribution of sampling statistics.

When dealing with a sampling proportion ($\hat{p}$, pronounced "p-hat") as a point estimate for an unknown population proportion (p), the standard deviation is np(1-p), where n = the number of samples and p = the proportion of the sample that has a certain characteristic (e.g., correct or incorrect classification). An interesting and useful phenomena is that the sampling distribution of a sample proportion will be approximately normally distributed when np(1-p) > 10. Similarly, when the number of samples is greater than 30 the distribution of sampling statistics will be approximately normally distributed regardless of the shape of the underlying data distribution.

Another interesting useful phenomenon, referred to as the law of large numbers (LLN), is that the mean of a sampling statistic (e.g. the sampling means or any other statistic) will converge towards the population mean

upon numerous repeated sampling experiments. In other words, the sampling distribution of the sample means is the probability distribution of all possible sampling means, and has a mean equal to the population mean μ (pronounced "mu") with a standard error (i.e., the SEM) equal to σ / n ^ (.5), where σ (pronounced "sigma") is the standard deviation of the sampling means. A number of scientific tests rely on this phenomenon to compare a test result to an estimate of an unknown population parameter.

The standard error (SE) of a statistic can also be used to calculate statistical a confidence interval, often in the form of a 90%, 95%, or 99% range. Confidence intervals are useful because they remind us to avoid incorrect and simplistic expectations that a sampling statistic is a perfect representation of the population statistics. Use of confidence intervals can also deter us from another simplistic error of rejecting scientific and statistical results because they are inherently probabilistic and therefor imperfect.

What do confidence intervals tell us?

Confidence intervals allow us to understand the probability relationship between an observed sample point estimate and an unknown population parameter. A 95% confidence interval shows the range of possible population parameters that do not differ significantly from the sample statistic at the .05 level. Similarly, a 99% confidence interval shows the range of possible parameters that do not differ significantly from the sample statistic at the .01 level, while a 90% confidence interval shows the range of possible values for which the difference between an unknown population parameter and the observed point estimate are not statistically significant at the .10 level.

Using the 95% confidence interval as an example, if the true value of the unknown population parameter is outside a sample confidence interval then it can be said that an event has occurred for which probability of occurrence due to random chance is less than or equal to 5%. This same kind of statement can be made about the 90% and 99% confidence intervals.

Confidence intervals can also be described in term of repeated sampling experiments in this manner: if the experimental procedure were repeated with numerous different samples then 95% of the confidence intervals for those different samples would include the unknown population parameter. The notion of confidence intervals can also be applied to a single future experiment, in which case the confidence interval is simply an expression of the probability that the future cal-

culation of the confidence interval will cover the unknown population parameter.

What confidence intervals cannot mean

Confidence intervals are potentially misunderstood, and it can be useful to clarify what they cannot be taken to mean. One potential misunderstanding of confidence intervals would attempt to interpret them as a probability estimate for a sample statistic of a repeated experiment.

Confidence intervals cannot be interpreted as a probability measurement of the unknown population parameter, or as an estimate of the probability that the unknown population parameter exists within a specified interval. Attempts at this type of interpretation are fundamentally incorrect because the unknown population parameter is a constant value for which probability statements are not warranted. Whether a calculated confidence interval does or does not include the population parameter is not a matter of random chance. Instead the confidence interval itself is the random variable of interest.

The purpose of a confidence interval is to describe the range of plausible values for an unknown population parameter based on the sample data. In this case, the 95% probability describes the reliability or the repeatability of the estimation procedure. In other words, the confidence interval describes the probability that the data have occurred due to random chance if the actual population parameter is not within the confidence interval.

Calculation of confidence intervals

Calculation of a confidence interval is often accomplished using critical values of z for the standard normal distribution. Table 2 shows z-values for commonly used confidence intervals. The lower limit and upper limit of the desired confidence interval are calculated using the sampling mean $\bar{x}$ (pronounced "x-bar") using two equations: lower limit = $\bar{x} - z * SE$ and upper limit = $\bar{x} + z * SE$. Often it is the lower limit or worst case scenario that is the most useful and informative value for

Table 2. Values of z for commonly used confidence intervals.	
99%	z = 2.576
98%	z = 2.326
95%	z = 1.959
90%	z = 1.645

risk evaluation and risk management decisions.

Conclusion

This paper has described the basic concept of confidence intervals in inferential statistics, including basic conceptual vocabulary and rudimentary calculations. In the realm of Bayesian statistics, the allegorical concept is referred to as a credible interval, for which a more complete description will have to be the topic of another paper.

Scientific test results are ultimately probability statements. Professional polygraph examiners who wish to attain or claim a level of expertise beyond the mere execution of procedural rules for test data acquisition and procedural rules for test data analysis will want to develop their ability to understand and converse on these topics. Many field practitioners can develop subject matter and interviewing expertise that can provide great practical and informational value without expertise and familiarity with the underlying test theory and statistical formulae. If the polygraph test result is not regarded with any usefulness, then the role of the polygraph examiner is simply that of an interviewer or interrogator. In that case there will be no expectation that polygraph field practitioners develop or possess any expertise in understanding the meaning, nuances and limitations of scientific and probabilistic classification and decision models.

If polygraph test results of themselves are to ever be regarded as a useful form of scientific and probabilistic information then it may become necessary for polygraph experts to become more familiar with the conceptual vocabulary and use of probabilistic models, including the correct use and understanding of statistical confidence intervals. Of course, some field practitioners may have little or no interest in developing their expertise in areas of statistical abstractions and probabilistic thinking, and may prefer instead to emphasize the role of subject matter expert in various topical areas of interviewing and interrogation, leaving the details of science and probabilistic classification to persons with expertise in those areas. Field practitioners will never be expected to execute the mathematical calculations themselves. For those who are interested in developing a level of professional expertise in the science of polygraph, lie detection, and credibility assessment it is hoped that this document may be a useful resource.

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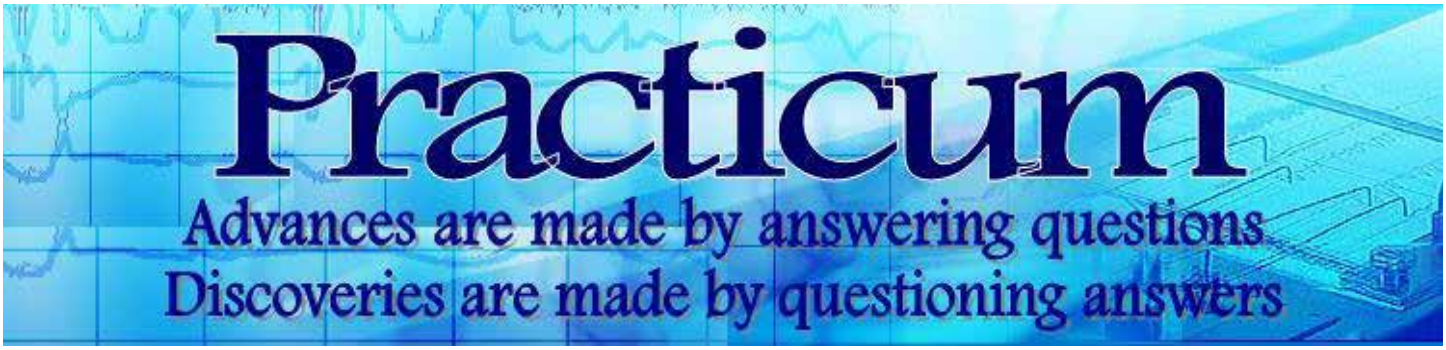

The Examiner: The Ultimate "Countermeasure"

By Tuvya T. Amsel

Browsing thru Google and YouTube reveals hundredth of thousands (316,000) of sites suggesting: "How to Pass a Lie Detector Test (Whether You're Lying or Not)", "How to Cheat a Polygraph Test (Lie Detector)", "How to Beat a Lie Detector Test" and alike. The sites offer tips and videos which presumably advise the reader how to successfully pass a polygraph test in spite of being deceptive. Judging by the quantity of sites, it seems that the need to avoid and escape detection followed by unpleasant consequences created a new industry. But don't be fooled there is nothing modern here or in Biblical words: "What has been will be again, what has been done will be done again; there is nothing new under the sun" . The internet is simply the nowadays tool of spreading old ideas. Methods of "beating" the polygraph have been around long ago. According to Jane , John Reid discussed the concept as early as 1945. Only the term has been replaced from "purposeful non-cooperation" to "countermeasures" (CM), one definition of which is: which is defined as: "Generally, methods used to mislead an observer. In polygraph research it has been labeled as actions taken by the examinee to influence the physiological responses to produce a truthful test outcome" As a result of the phenomenon's magnitude, examiners have sought to develop various methods to detect and eliminate the examinees' efforts to "beat" the polygraph, methods, known as counter-counter-

The author is a private examiner in Israel, and a regular contributor to the publications of the American Polygraph Association. The views expressed in this column are solely those of the author, and do not necessarily represent those of the American Polygraph Association. Publishable comments and replies regarding this column can be sent to editor@polygraph.org.

measures. The counter-countermeasures were integrated into polygraph examiners training as well as into various governmental manuals such as: the U.S. Customs and Border Protection Office policy and reference manual and the Federal Psychophysiological Detection of Deception Examiner Handbook . In addition motion detectors, to detect physical countermeasures during the test became a standardized device utilized by examiners in the test.

According to Kraphol & al. :"…There are several typologies for countermeasures, depending on the definition used. …" , but generally they are divided into: mental and physical countermeasures. Regarding their effectiveness: "…Under some circumstances polygraph countermeasures have been found to be effective, such as when an examinee receives special training and feedback. Most spontaneous attempts are crude and ineffective ". (for countermeasures literature research review go to Handler et al.)

Who is really beating the test?

Upon being told that a certain examinee passed the test, a typical comment made by parties, who are aware of the examinee's guilt based on hard evidence, is: "the examinee fooled the machine" or "the examinee cheated the instrument" or "the examinee beat the polygraph". However, a closer inspection and quality control of those

tests' questionnaires, charts and other aspects of the test reveal a different truth: it was not the examinee that "beat" the polygraph but it was rather the examiner who did so. And why should an examiner "beat" the test? Some do so unintentionally while others abuse professional requirements on purpose. When facing such reality you realize that the core of the matter is not about validity but rather about morality. Simply because by the end of the day what matters is not the scientifically validated techniques and protocols that are being practiced but rather the morality of the examiner. Polygraph end users or consumers do not care what is inside that "magical black box" called polygraph all they care is about the outcome and when the outcome is based upon immoral considerations rather than professional, the never ending endeavor to professionally improve is compromised.

Typology

Roughly, in this context examiners can be divided into two major categories: the unprofessional examiner and the unethical examiner and a mixture of both i.e. unethical unprofessional and unethical professional

Within the unprofessional examiners we found two sub categories: the ignorant unprofessional and the ad hoc unprofessional. The first out of ignorance which can include bad training or bad practice. For example, poorly phrased relevant or comparison questions may enable the examinee to mentally evade either the RQ or to over response to the CQ. The later, the ad hoc unprofessional, performs unprofessionally as in the example of a periodic security screening test when upon detecting responses in a RQ the examinee provides - in the post test - a plausible explanation to the responses but the examiner fails to perform a further examination to verify or reject if that explanation was the only reason for those responses.

The unethical examiner will consciously perform in a manner that will lead to a requested result, e.g. raising her/his tone of voice in the relevant question in order to intimidate the examinee and alike.

The unprofessional unethical examiner is relatively easy to detect simply because her/his efforts to reach the desired result are relatively transparent by asking badly phrased questions that are not really covering the test objectives.

The most dangerous of all is the unethical professional who is qualified enough to manipulate the examinee in the pretest in a manner that will result in the desired outcome. Unless the test is videoed the chances of detecting the fraud are slim.

Morality and Ethics

The APA leadership invest tremendous

efforts to elevate its' members professionalism. Validated test formats, test protocols, algorithms, better and more thorough training, modern instrumentation are all leading to more accurate test results. These actions lead to a growth in the recognition and confidence in the test results by jurists and academics who traditionally opposed the polygraph. But all these efforts are fruitless and shattered by unprofessional and especially unethical examiners who undermine all these valued and precious efforts.

If not for the sake of our industry reputation, examiners who lack professionalism and morality should keep in mind that by acting so they self-inflict. End user customers who in one hand enjoy the favorable and desired results do not trust these same examiner's results when they are retained by others. In addition, rumors that such non-ethical practices exist results in reduced confidence in the polygraph which in return decrease the demand for tests.

Members should refresh and constantly be reminded of our society's moral values in general and the APA Code of Ethics in particular as well as keeping in mind that our association slogan is "Dedicated to the Truth" and defiantly not "dedicated to your self-interest".

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For more than thirty years the Plethysmograph has been available on Stoelting Polygraphs. Originally known as a CAM (Cardio Activity Monitor) the mechanical recording of Peripheral Blood Flow (PBF)was accomplished using a sensor button on the thumb. As the PBF decreased, the tracing showed a slight increase and then a dramatic drop. Scoring using the CAM was highly subjective and not used often in forming opinions.

As technology improved Stoelting replaced the CAM with a true Plethysmograph. The photo light sensor recorded the reduction of blood flow and displayed the data much as we see it today. When the use of Photoelectric sensors became available, Stoelting adopted this technology giving examiners access to the latest recording technology. Today, CPSpro offers high quality recording of peripheral blood flow.

Many examiners find scoring the Plethysmograph difficult. The scoring criteria is a combination of decreased blood flow and duration. Even a trained eye with decades of experience scoring the Plethysmograph has difficulty. To improve the ability of examiners to

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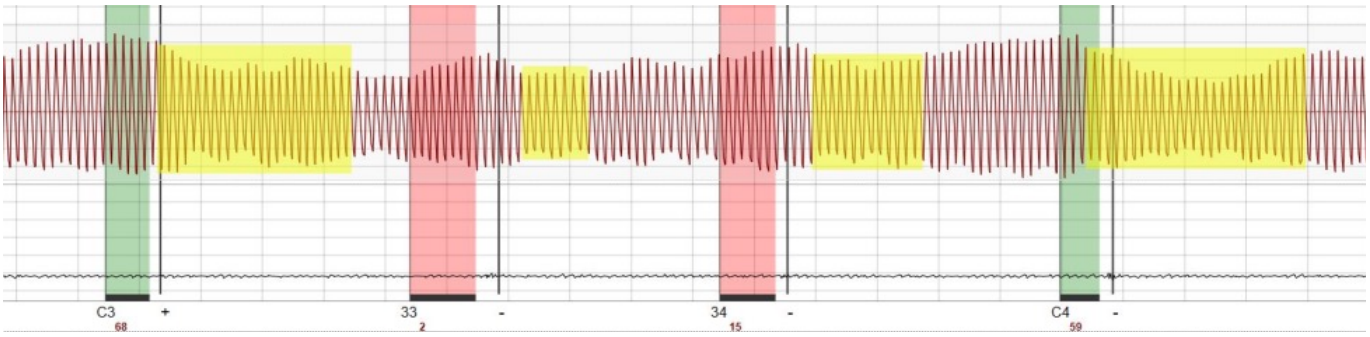
accurately score the Plethysmograph Stoelting created a visual comparison tool. Using this tool, the computer measures both duration and decrease in blood flow in both comparison and relevant questions. The computer then graphically and numerically depicts the strength of reactions allowing the examiner do determine which reaction is the largest. In addition, this graphic depiction allows the examiner to determine if any movement within the scoring window impacted the recording. After years of use, it appears the impact of deep breaths and other movements have no impact on the Plethysmograph. Thus providing more data for improved examination out come.

To set up the Plethysmograph:

1) Go to *Toolà Preferences à Channels*
2) Scroll down to Plethysmograph
3) Change Collect to “Enable”

By enabling the Plethysmograph, you will be able to collect and see the tracings on the screen. To best use the CPSpro scoring, we recommend that the rank scoring magnitudes be used. They are located on the bottom of the chart, below the question label. The color of the Rank Scoring magnitude will correlate with the color of the channel it represents. To select the channel, simply click on the

tracing. This allows the examiners to take full advantage of the computerized measurements (*developed by the University of Utah*).



The value on the rank scoring magnitude shows which question had the greatest reaction. As you can see, C3 had
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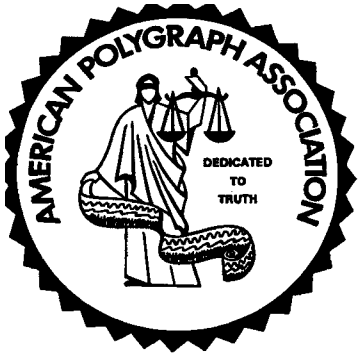
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