APA MAGAZINE

The Magazine for the Polygraph Professional

Election Results P. 11
By Laws P. 39

July/August 2015
Volume 48,4

50th APA ANNUAL SEMINAR

POLYGRAPH IN THE 21ST CENTURY

August 30 - September 4, 2015
Hilton Palmer House

INTERNATIONAL ACADEMY
of POLYGRAPH
Since 1981

Law Enforcement Polygraph Examiner Training

... it isn't the instrument. it's the examiner
Chuck Michaels

2015 School Calendar Class Dates

February 16 - April 24

October 5 – December 11

10 week on campus course

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- Instruction in all recognized techniques
- Computerized instrumentation
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- Equipment Discounts

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Deadlines

This issue closed on
July 10, 2015.

Deadline for September/October 2015 issue is September 18, 2015.

Submission of Articles

The *APA Magazine* is published by the American Polygraph Association. All views, opinions and conclusions expressed in this magazine are those of the authors, and do not necessarily reflect the opinion and/or policy of the APA or its leadership. References in this magazine to any specific commercial products, process, or service by trade name, trademark, manufacturer or otherwise, does not necessarily constitute or imply endorsement, recommendation, or favoring by the APA or its leadership.

Contents

Membership News

Training & Seminars

From the Board

Regular Features

Special Features

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EDITOR'S CORNER

By Mark Handler

Greeting from the editor's desk…

I hope this finds you all well and look forward to seeing many of you soon in Chicago. When I took the helm from Don Krapohl in January, he and I had a discussion with the board of directors about the quantity and quality of content submitted to the journal. Historically the journal was published quarterly, regardless of content volume. The board considered the issue of content and quality and decided we would better serve the membership with biannual journals with significant quantity of quality content. To that end you may have noted we have published one journal this year 44(1) and we are preparing to publish the second around September. The first journal of 2015 was 118 pages and had six robust articles. The journal cost the APA over $22,000 to print and mail. The majority of the cost ($11,544.66) was for postage-with a substantial portion due to foreign mailing costs.

We recently moved to association management software to host our website and maintain our records. Lisa Jacocks and I have put in countless hours building, preparing and learning the new site. One of the advantages of the new site is our ability to upload past journal and magazine content and make it readily available to any active member. President Nelson directed me to upload all journal content dating back to 1972 and make it accessible for free to all active members. Simply login, go to the "Publications" tab, and search for your desired article. Polygraph schools will be able to provide this resource to their students allowing students access

to a comprehensive peer-reviewed database of polygraph related articles. As you probably know, we distribute the APA magazine electronically bi-monthly via email. Beginning with the second journal of this year, 44(2), we will be doing the same. The next journal is slated to be even larger than the first one, right now approximately 125 pages. President Nelson has directed me to begin distribution via email of the journal content in PDF, saving the association approximately $23,000. Should you need a paper copy, simply download the content and print it right there. This will be a tremendous help to a majority of our members. A surprisingly large number of journals never make it to their destination. Now all members can get the articles anytime, anywhere, as long as they have an internet connection.

In order to ensure you receive your journal you must login to the website and ensure you have a good email address registered. We use the website database to produce the email distribution list to send the magazines and now the journals. We will continue to list the individual articles separately on the "Publications" section of the site. There is a searchable excel spreadsheet you can also download to allow you to refine any search you may conduct. Once you locate the article you want, simply use the journal database to find the journal that contains the article and download it to your computer.

Thanks for being patient with us as we iron out the bugs of the new software and website, it is a learning curve for Lisa and for me. We spent (and spend) a great number of hours in training, in practice and in working on the site. The new site and software actually saves the association over a thousand dollars per year. The company that runs it is called MemberClicks and they manage over 1500 small staff associations like ours. They are working to build our member search service and hope to have it available in the next couple of months. Please feel free to email me at editor@polygraph.org if you have comments or concerns about the site, the magazine or the journal. If you experience any troubles with logging on, send me an email and I will try to get right back to you. As always, I am humbled by the trust you and the board place in me.

Mark Handler, Editor

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

APA FED ID # 52-1035722

THURSDAY & FRIDAY, NOVEMBER 5-6, 2015
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: $94.00, SINGLE/DOUBLE, plus taxes (currently 13% 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 2015)

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 **10/5/15** Individual departure dates will be reconfirmed upon check-in. (5 DAY CANCELLATION notice required)

REGISTRATION FEE: Pre-paid by October 5, 2015
$250 APA Member/Applicant
$250 VPA Member*
$275 Non-Member

REGISTRATION FEE AFTER October 5, 2015
$275 APA Member/Applicant
$275 VPA Member*
$300 Non-Member

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

AMERICAN POLYGRAPH ASSOCIATION
P O BOX 8037
CHATTANOOGA, TN 37414
1-800-272-8037 or 423-892-3992
Fax 423-894-5435

TOPICS

TBA

CONTINUING EDUCATION HOURS
When you attend this seminar, you receive up to 16 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 **10/5/15** will receive a full refund. Persons canceling **after 10/5/15 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)

NAME_____ BUSINESS PHONE_____

ADDRESS_____ E-MAIL _____

CITY/STATE_____ZIP_____

NAME BADGE (CALLED BY)_____

ADDITIONAL $50.00 FOR WALK-INS

( ) CHECK MADE PAYABLE TO: AMERICAN POLYGRAPH ASSOCIATION is enclosed
( ) CHARGE $_____ TO MY: VISA ( ) MC ( ) AE ( )

Card number _____ EXP:_____

Card Holder's name _____ Billing address_____

SIGNATURE_____

CES-Virginia Beach, VA (Nov 5-6, 2015) We can not possibly reach everyone who would be interested in taking part if this seminar. Please help us by making copies of the page for your co-workers and business associates. Thank you for your assistance.

Polygraph Examiner Training Schedule

American Polygraph Association

Continuing Education Seminar
November 5-6 2015 (Virginia Beach)
January 28-30, 2016 (New Mexico)

PCSOT Advance Course (Reno, NV)
October 19-21, 2015

Academy for Scientific Investigative Training

Basic Examiner Course
September 21 - November 27, 2015
October 5 - December 11, 2015 (Pretoria)

Advanced Examiner Course
October 3 - 4, 2015 (Pretoria)
October 10-11, 2015 (Cape Town)

Basic PCSOT
November 30 - December 4, 2015

Forensic Assessment Interview and Interrogation Seminar
September 28 - October 2, 2015
October 5 - 9, 2015 (Pretoria)

Academy of Polygraph Science

Basic Examiner Course (Fort Myers)
August 31, November 6, 2015

PCSOT Course (Fort Myers)
November 9 - 13, 2015

American International Institute of Polygraph

Basic Examiner Course
August 10 - October 31, 2015 (Atlanta, GA)
September 14 - November 20 (South Africa)

Marston Polygraph Academy

(all listed courses taught in San Bernardino, CA)

PCSOT Basic Course (40 hours)
September 14 to September 18, 2015

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

Three Day APA Advanced PCSOT Course
Reno, NV October 19-21, 2015
Peppermill Resort-Casino

Course will be taught by Rob Lundell, Polygraph Associates of Oregon and APA designated Primary Instructor. Rob has over 30 years experience testing sexual offenders and been actively involved in every major advancement with the APA's model policy for PCSOT since 1997. Course is APA approved for 24 hours of continuing education. Special room rates available at this beautiful facility with training being held in the 17th floor Penthouse Suite classroom.

Contact Rob at 541-840-7878 or ntrgpoly@aol.com for additional information or to receive a brochure and registration information.
$400.00 (space limited to 25)

AMERICAN POLYGRAPH ASSOCIATION (APA)
CONTINUING EDUCATION SEMINAR
CO-SPONSOR – NEW MEXICO SOCIETY OF FORENSIC POLYGRAPHERS
ADVANCED REGISTRATION IS REQUIRED

APA FED ID # 52-1035722

THURSDAY - SATURDAY, JANUARY 28 & 30, 2016
7:00am – 6:00pm

ISLETA RESORT & CASINO
11000 Broadway Blvd SE
Albuquerque, NM
To make Hotel Reservations:
Call the **1-877-747-5382** or ***505-848-1999***

Room rate: $99.00, SINGLE/DOUBLE, plus taxes, be sure to mention **Group Code #SFCO115**

Complimentary WI-FI, valet and self parking and shuttle service to and from the Albuquerque International Airport

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 **12/30/15** Individual departure dates will be reconfirmed upon check-in. (5 DAY CANCELLATION notice required)

REGISTRATION FEE: Pre-paid by December 30, 2014
$250 APA Member/Applicant
$250 NMSFP Member*
$275 Non-Member

REGISTRATION FEE AFTER December 30, 2014
$275 APA Member/Applicant
$275 NMSFP Member*
$300 Non-Member

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

AMERICAN POLYGRAPH ASSOCIATION
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CHATTANOOGA, TN 37414
1-800-272-8037 or 423-892-3992
Fax 423-894-5435

TOPICS

GREG FOURATT - Cabinet Secretary of NMDPS and Former Federal Prosecutor

Polygraph Laws and Polygraph Casses of importance or interest in reference to admissibility in the NM courts –

MARK HANDLER - APA Editor, AAPP Research & Information Chair

History of ESS w/workshop and practice scoring charts

DLC Questions and DLST Pre-Test Interview practice

Countermeasurers workshop

Photoelectric Plethysmograph workshop

APA Meta-Analytic Review

Instrumentation Workship

CONTINUING EDUCATION HOURS
When you attend this seminar, you receive up to 20 CEHs (Continuing Education Hours) approved by the American Polygraph Association and the Federal Certification Program for Continuing Education and Training.

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)

APA Cancellations Refund Policy:
Cancellations received in writing prior to **12/30/15** will receive a full refund. Persons canceling **after 12/30/15 will not** receive a refund but will be provided with the handout material

NAME_____ BUSINESS PHONE_____

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NAME BADGE (CALLED BY)_____

ADDITIONAL $50.00 FOR WALK-INS

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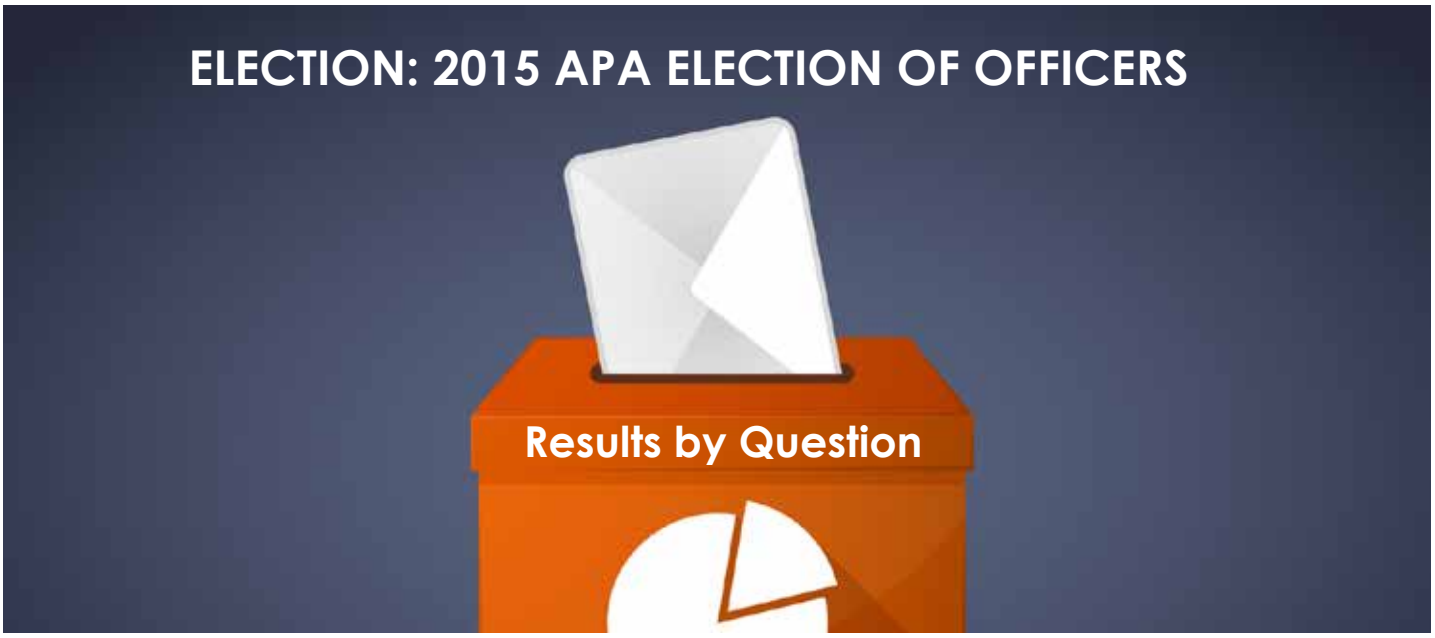
( ) CHARGE $_____ TO MY: VISA ( ) MC ( ) AE ( )
Card number _____ (CVV2)_____EXP:_____
(CVV2 is a 3 digit number found on the back of your VISA or MC card or a 4 digit number on the front of the AE).

SIGNATURE_____

CES-Albuquerque, NM (Jan 28 -30, 2016) We can not possibly reach everyone who would be interested in taking part if this seminar. Please help us by making copies of the page for your co-workers and business associates. Thank you for your assistance.



President-Elect	Votes	Percentage
Daniel Mangan J.	154	28%
Patrick O'Burke	394	72%

VP Law Enforcement	Votes	Percentage
Daniel Violette	472	100%

Vice President Private	Votes	Percentage
Gary Davis	468	100%

Director 1	Votes	Percentage
James Mc Cloughan	484	100%

Director 3	Votes	Percentage
George Baronowski	318	60%
Brian Morris	208	40%

Director 5	Votes	Percentage
Steve Duncan	321	60%
William Fleisher	212	40%

2015 APA Elections Schedule

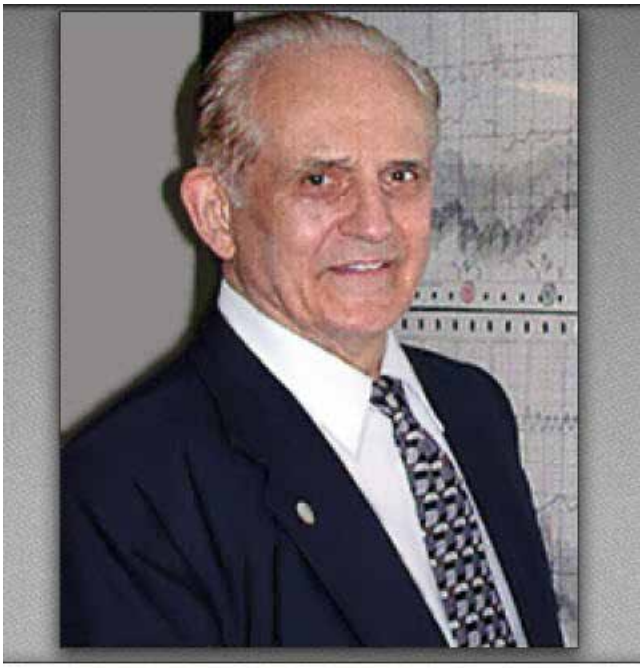
- **July 4: Email notification of elections (Ensure your email address is current on the APA website)**
- **July 5 – 11: Electronic elections.**
- **July 13: Posting of results on the APA website.**
- **August 2 – 8: Runoff elections, if necessary.**
- **August 10: Notification to winners. Posting of final election results.**
- **September 3: Officers sworn in at the APA Annual Banquet.**

For additional information, contact Don Krapohl at APAkrapohl@gmail.com or (803) 463-1096.

IN MEMORIAM ROBBIE BENNET

Virginia Polygraph Association Seminar, November 2006

IN MEMORIAM
CLEVE BACKSTER



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Chicago, Illinois

Certificate

This is to certify that GROVER C. BACKSTER, JR.

has successfully completed a six-weeks' course in the principles and practice of the polygraph in the detection of deception.

Date of Completion August 9, 1948

Leonarde Keeler

POLYGRAPH EXAMINER COURSE $4495 !

the Polygraph Institute

2015 Schedule

Basic Examiner

- Feb 23 - May 01
- Sept 7 - Nov 13

Validated Interview

- Feb 9 -13 (5 day enhanced)
- TBA

JPCOT/PCSOT

- May 4 - May 8
- Nov 16 - 20

TDLR CE Course

- Contact us for scheduling

- Approved by the Texas Department of Licensing and Regulation, the American Polygraph Association, and the American Association of Police Polygraphists. *
- Demonstrated past performance in polygraph training with instructors that have more than 100 years of combined field experience.
- Spacious comfortable classroom with audio/video monitored practice labs.
- Students using our ***Validated Interview Technique*** learn to correctly conduct a narrative interview and accurately evaluate valid behavior cues.
- Exclusive Patent Pending interviewing using a tablet that collects sweat gland activity, or EDA, for increased decision support.
- Our Post Conviction Sex Offender Training incorporates instructors from related disciplines; including supervision officers and therapists.

The successful completion of an APA accredited polygraph program is only one of the necessary prerequisites for membership in the American Polygraph Association or other organizations.

Register on line at: *www.thepolygraphinstitute.com*

We accept Visa, MasterCard, Discover and business checks.

10223 McAllister Fwy Suite #201, San Antonio TX 78216

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50TH ANNUAL APA SEMINAR

AUGUST 30 - SEPTEMBER 4, 2015
PALMER HOUSE HILTON HOTEL,
17 EAST MONROE SREET
CHICAGO, IL 60603
ADVANCED REGISTRATION IS REQUIRED
(All room reservation must be made individually through the hotel's reservation department)
888-370-0980 - In house - 312-726-7500
APA FED ID #52-1035722

ROOM RATE: $139.00, Single/Double occupancy, plus taxes (currently 16.4%), 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 8/13/15 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, 8/30/15 10:00am - 5:00pm Monday, 8/31/15 7:00am **Seminar Sessions:** Sunday-Friday, 8/30/15 - 9/4/15

APA Cancellations and Refund Policy: Cancellations received in writing prior to 8/13/15 will receive a full refund.
Tax Deductions: All expenses of continuing education (including registration fees, travel, meals and lodging) incurred to maintain and improve professional skills are tax deductible subject to the limitations set forth in the Internal Revenue Code. **Registration fee includes professional instruction, seminar materials, refreshment breaks, Sunday Reception and Thursday banquet)**

TUESDAY NIGHT EVENT
MYSTIC BLUE CRUISES
(dinner, dancing, entertainment and networking)
5:30 - 8:30 PM
Tickets $35
#tickets____@$35=_____

THURSDAY NIGHT BANQUET
___ #attending
___will not attend
___vegetarian meal(s)

NAME:_____ PHONE:_____
ADDRESS:_____CITY:_____STATE:_____ZIP:_____
NAME ON BADGE:_____ GUEST NAME:_____
GUEST NAME ON BADGE:_____

PAYMENT RECEIVED BY AUGUST 13, 2015
____$350 - MEMBER/APPLICANT
____$500 - NON-MEMBER
____$125 - PER GUEST(Cannot Attend classroom presentations)
(**Guest fee includes:** Sunday Reception, Guest Brunch Monday and Banquet Thursday)

PAYMENT RECEIVED AFTER AUGUST 13, 2015
____$400 - MEMBER/APLICANT
____$550 - NON-MEMBER
____$175 PER GUEST (Cannot Attend classroom presentations)
(**Guest fee includes:** Sunday Reception, Guest Brunch Monday and Banquet Thursday)

ADDITIONAL $50 FOR THOSE WHO PAY AT THE SEMINAR

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

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CREDIT CARD PAYMENTS: Card Number_____
Expiration date:_____ cvv2:_____
Signature:_____

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

THE CHICAGO CUBS AND HISTORIC WRIGLEY FIELD

The Chicago Cubs will be in town the week of the seminar and Monday, August 31 is a night game! The Cubs will be hosting the Cincinnati Reds. We have a limited number of tickets available, cost is $15. Please contact the APA National Office if you are interested. 1--800--272--8037

JOIN US TUESDAY, SEPTEMBER 1, 2015
5:30-8:30 PM
For a
MYSTIC BLUE DINNER CRUISE

The casual, yet lively, atmosphere of a *Mystic Blue* Dinner Cruise in Chicago is a terrific way to cap off the day with a group of friends, business associates or that special someone. Watch the sun set on the horizon and the Chicago skyline light up as you enjoy panoramic views including iconic sights like Willis Tower, Navy Pier and John Hancock Center.

You'll have 2.5 or 3 hours to take in the views and sample tasty dishes from the *Mystic Blue* dinner buffet. The onboard DJ will keep the tunes turned up throughout the cruise so you can show off those dance moves. Don't hear your favorite song? Special requests are welcome at the DJ booth!

Be sure to get your tickets ($35 per person)

Mark your seminar registration or contact the APA National Office

1-800-272-8037

SUNDAY, AUGUST 30, 2015	
CLASSROOM A	
1:00 - 3:00 PM Relevant Scientific Domains Guillermo "Gil" Witte San Diego Police Dept.	3:00 - 5:00 PM Screening Principles Using Evidence Based Practices Guillermo "Gil" Witte San Diego Police Dept.
SCHOOL DIRECTOR'S MEETING 1:00 - 3:00 PM (ROOM TO BE ANNOUNCED)	
APA WELCOME RECEPTION 6:30 - 8:30 PM	

MONDAY, AUGUST 31, 2015	
CLASSROOM A (disponible en Espanol)	
7:30 - 8:00 AM Break Sponsored by:	
8:00 - 9:00 AM	OPENING CEREMONIES
Call to Order -	Raymond I. Nelson, APA President
Master of Ceremonies -	Michael C. Gougler, Seminar Program Chair
The National Anthem -	Chicago Police Department Honor Guard
Presentation of Colors -	Chicago Police Department Honor Guard
Pledge of Allegiance -	
Taps -	Richard Pascuito
Welcome to Chicago -	F. Lee Bailey
Invocation -	Barry Cushman, APA Director
9:00 - 9:15 AM Break Sponsored by:	
9:15 - 12:00 NOON High Profile Polygraph Cases Donnie Dutton, APA Past President	
12:00 NOON - 1:00 PM Lunch on your own	
1:00 - 5:00 PM ESS Mark Handler, APA Editor	
2:45 - 3:00 PM Break Sponsored by:	
(CONT'D) ESS Mark Handler, APA Editor	
CINCINNATI REDS vs CHICAGO CUBS WRIGLEY FIELD 7:05 PM $15 per ticket Contact the APA National Office 1-800-272-8037 (tickets are limited)	

TUESDAY, SEPTEMBER 1, 2015		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 10:00 AM AFMGQT Patrick Roche	8:00 - 10:00 AM Current Issues in Polygraph (Panel Discussion) Gordon L. Vaughan, Esq. APA General Counsel F. Lee Bailey Donnie Dutton Mark Handler David Raskin Pam Shaw	8:00 - 10:00 AM The Inconclusive/No Opinion Exam - Who's Fault Is It? Darryl Starks APA VP Government
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 Federal ZCT/You Phase Patrick Roche	1:00 - 2:30 PM Legal Issues in PCSOT Gordon L. Vaughan, Esq. APA General Counsel	1:00 - 2:30 PM TBA Frank Horvath, PhD APA Past President Stanley M. Slowik
POLYGRAPH INSTRUMENTS WORKSHOP 2:30 - 4:00 PM		
CLASSROOM A LAFAYETTE INSTRUMENT	CLASSROOM B AXCITON	CLASSROOM C LIMESTONE TECHNOLOGIES	CLASSRROM D STOELTING COMPANY
5:30 - 8:30 PM TUESDAY NIGHT EVENT MYSTIC BLUE CRUISES DINNER and DJ ENTERTAINMENT (meet in lobby at 5:30, load buses, cruise sails at 6:30, return to pier 8:30, load buses, return to hotel)			

WEDNESDAY, SEPTEMBER 2, 2015		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 12:00 NOON Everything You Ever Wanted to Know About Screening, But Were Afraid to Ask Donald J. Krapohl APA Past President	8:00 - 10:00 AM A Defensible Theory for Polygraph: The Preliminary Process Theory (PPT) John Palmatier, PhD	8:00 - 12:00 NOON PCSOT J. Patrick O'Burke APA VP Private
9:45 - 10:00 AM Break Sponsored By:		
(CONT'D) Everything You Ever Wanted to Know About Screening, But Were Afraid to Ask Donald J. Krapohl APA Past President	10:00 - 12:00 NOON What Does Theory Suggest for Polygraph Practice John Palmatier, PhD	(CONT'D) PCSOT J. Patrick O'Burke APA VP Private
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 5:00 PM The Tactical Polygraph and Interview/Interrogation Thoughts Lance Fragomelli, FBI Mike Sullivan, Assistant US Attorney	1:00 - 5:00 PM Countermeasures Walt Goodson APA President Elect	1:00 - 5:00 PM The UTAH Technique David Raskin, PhD
2:45 - 3:00 PM Break Sponsored By:		
(CONT'D) The Tactical Polygraph Lance Fragomelli, FBI Mike Sullivan, Assistant US Attorney	(CONT'D) Countermeasures Walt Goodson APA President Elect	(CONT'D) The UTAH Technique David Raskin, PhD

THURSDAY, SEPTEMBER 3, 2015		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 12:00 NOON Understanding Dynamics of Close Quarter Attacks and Counters Erwin Ballarta Executive Director Texas Police Association	8:00 - 3:00 PM Effective Diagnostic Testing Using the Directed Lie Comparison (Course approved by Texas Dept of Licensing and Regulation) Lt. Matt Hicks Lt. Matt Mull Lt. Dennis Westerman Texas Dept of Public Safety	8:00 - 12:00 NOON The Wizard's First Rule: Debunking Common Myths in the Polygraph Profession About Countermeasures Charles Honts, PhD
9:45 - 10:00 AM Break Sponsored By:		
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 3:00 PM Federal Scoring System Donnie Dutton APA Director	8:00 - 3:00 PM Effective Diagnostic Testing Using the Directed Lie Comparison (Course approved by Texas Dept of Licensing and Regulation) Lt. Matt Hicks Lt. Matt Mull Lt. Dennis Westerman Texas Dept of Public Safety	1:00 - 5:00 PM PCSOT Issues Don Grubin and Eric Holden APA Past President
2:45 - 3:00 PM Break Sponsored By:		
3:00 - 5:00 PM PLE Principles Mark Handler, APA Editor Pam Shaw, APA Past President	3:00 - 5:00 PM Singapore Research Cholan MINDEF director	(CONT'D) PCSOT Issues Don Grubin Eric Holden, APA Past President
SCHOOL INSPECTOR TRAINING 3:00 - 5:00 PM (ROOM TO BE ANNOUNCED)		
APA ANNUAL BANQUET AND AWARDS 6:30 - 7:00 PM COCKTAILS 7:00 PM DINNER		

FRIDAY, SEPTEMBER 4, 2015		
7:30 - 8:00 AM Break Sponsored By:		
CLASSROOM A (disponible en Espanol)	CLASSROOM B	CLASSROOM C
8:00 - 12:00 NOON Polygraph and Confession Law Gordon L. Vaughan, Esq. APA General Counsel	8:00 - 3:00 PM PCSOT - A Practical Approach to Interviewing and Target Selection Raymond I. Nelson APA Chairman	8:00 - 12:00 NOON Best Practices - Tips that Help and Things that Work George Baranowski APA Director
9:45 - 10:00 AM Break Sponsored By:		
12:00 Noon - 1:00 PM Lunch On Your Own		
(CONT'D) Polygraph and Confession Law Gordon L. Vaughan, Esq. APA General Counsel	(CONT'D) PCSOT - A Practical Approach to Interviewing and Target Selection Raymond I. Nelson APA Chairman	(CONT'D) 8:00 - 12:00 NOON Best Practices - Tips that Help and Things that Work George Baranowski APA Director
12:00 Noon - 1:00 PM Lunch On Your Own		
1:00 - 3:00 PM History of the APA: A Human Perspective Lynn Marcy APA Past President	8:00 - 3:00 PM PCSOT - A Practical Approach to Interviewing and Target Selection Raymond I. Nelson APA Chairman	1:00 - 3:00 PM Polygraph and Arson Investigations Cynthia Coronado, Dallas Fire Rescue Dept Dallas, Texas
3:00 PM **CLOSING REMARKS** **WALT GOODSON** **APA PRESIDENT**		

President's Message

Raymond Nelson

Greetings APA Examiners. Only a few short weeks and days remain until the APA annual conference in Chicago. This year marks the 50th anniversary of the APA and annual conference. A lot of things have changed in the last 50 years, in terms of technology, geo-politics, and professional work. Please join us in Chicago for one of the largest, most interesting, most informative, and most useful continuing education events in the history of our noble and important profession. In attendance will be polygraph professionals from across the United States and also from a number of other countries. Also in attendance will be some of the founding charter members of the APA – people who participated in the formulation of the goals and vision that has led the APA to become the preeminent world-wide leader in polygraph standards, training, information, and continuing education. It was through early leadership, vision, and careful planning that we have survived the challenges of the past 50 years. Your participation in APA activities, along equally careful leadership and planning will be needed to take us through the next 50 years.

In addition to our 50th anniversary seminar, this year marks some important things. Firstly, in order to plan for a stable and efficient future, some changes have been drafted to the APA by-laws. These changes are necessary to ensure the continued effectiveness of the APA in the context of the legal and operational environment of professional organizations in the 21st century. Please look to the APA website and email communications for detailed information about those proposed changes. The fundamental aspects of the change involve the change from two operating documents that define the business and managerial operation of the APA to a single document that is more consistent with how professional associations have learned to define their structure and operations. There is little, if anything, in the way of changes that affect the way that APA members conduct polygraph examinations in the field, and little change in how APA members participate in the association. At present there some discussion of future changes that will be intended to better equalize the status and participation of all APA members.

The annual conference this year marks the first year during which scientific alternatives to the polygraph are commercially available. In the past, commercial alternatives to the polygraph have tended to be wholly pseudoscientific, and intended mostly to take advantage of public misunderstanding of scientific testing in general and dislike towards the polygraph in particular. With the development of ocular-motor technologies for credibility assessment, the polygraph profession will be faced with an increasing challenge to account for test results with scientific objectivity. Ocular-motor researchers have been publishing polygraph level accuracy results – using automated test administration and automated test data analysis – in reputable scientific journals. Regardless of whether or not this is the last of all scientific technologies for lie detection and credibility assessment, it is likely that a new scientific tool will change the way people think about the polygraph, including the expectations they have for polygraph professionals and polygraph test results.

There is little question about whether the polygraph works. It does. When scientific thinkers consider the evidence they conclude that it works. They have also tended to comment that it is not perfect, and that polygraph examiners in the past have tended to describe the polygraph using language and concepts that are not consistent with other forms of science. Although important progress has occurred in recent years regarding our ability to describe and discuss the scientific basis of the polygraph, herein exists the potential point of disconnection between the polygraph profession and the sciences, including forensic science. All scientists know that tests are not expected to be perfect. The need for scientific tests stems from the desire to measure or quantify some amorphous phenomena that cannot be subject to direct physical/linear measurement (which would

be near perfect but still subject to mechanical measurement error), and which cannot be subject to simple deterministic observation (which would be theoretically perfect because it would be completely un-effected by randomness and completely un-effected by human behavior). Scientists know that all forms of testing are inherently imperfect and therefore inherently probabilistic. This is the reason that scientists have learned to depend on and make use of probability theory and probabilistic thinking when providing and explaining test results. Scientific tests are not expected to be perfect, but are expected only to quantify the margin of uncertainty surrounding a test result or categorical conclusion. Courts too – in the form of standards like the Daubert standard for admissibility of scientific evidence – have learned this, and are increasingly asking polygraph experts to quantify and account for the probability of an erroneous test using common statistical concepts such as a confidence interval or p-value or other probabilistic description of the level of statistical significance.

In the absence of training and education in probability theory and probabilistic thinking, polygraph professionals and others have at times endorsed expectations that the polygraph should be perfect – that there should be no errors, and that the occurrence of an error can only mean that the examiner lacked competence (with the expectation that a competent examiner will have zero errors) or the examiner made a procedural error (with the expectation that the absence of procedural errors will mean the complete absence of test errors). In the absence of training and education in science and research polygraph examiners have been eager to publish claims of near perfect accuracy, and eager to encourage expectations of perfection – so long as the examiner is sufficiently experienced and sufficiently competent. In the past, we have been eager to refer to published claims of near perfect accuracy whenever an authoritative source has permitted or encouraged us to do so. The result of this has been a persistence of expectations for perfect or near perfect accuracy from the polygraph, along with persistent frustration whenever people discover that it is actually not perfect. In the end, encouraging or endorsing expectations for perfect test accuracy, for a complete absence of testing errors – whether polygraph testing or any other form of testing – is an exercise in fantasy and pretense. An equally misguided activity, from a scientific perspective, will be to attribute all test errors to professional competency. No doubt that competency matters. But the existence of a small portion of random testing errors is a matter of reality. Expectations for perfection are inherently unscientific.

The long term result is that we, as polygraph professionals, have been more vulnerable to criticism and cynicism than is warranted. This vulnerability is also anchored in our

adherence to traditional approaches which sometimes include procedures that are not always well supported by scientific evidence. Many accredited polygraph training programs today have continued to require polygraph examiner trainees to devote time attention learn and memorize a number of concepts and principles that evidence has shown to make no real difference. Rigorous scientists have suggested the ritualistic traditions that accomplish nothing in reality but pretend to be scientific should thought of as pseudoscience or cargo-cult science. We should strive to avoid this and outgrown traditions that distract attention from issues that actually make a difference. Symptomatic questions are one example. Exclusive comparison questions is another. Obsession over different types of relevant questions, for which the evidence has not shown any discriminating capabilities, is yet another. Confusion and frustrated expectations continues to surround the multi-facet hypothesis, which is without any scientific support for any of the expected advantages. Unfortunately, more time, attention, and emphasis are sometimes devoted to some of these unscientific issues, than is devoted to issues of actual science such as understanding the need and use for normative reference data and statistical corrections to manage multiplicity effects and compounded error rates when we use subtotal scores to evaluate polygraph results. It is only in recent years that have we begun to place more committed emphasis on probabilistic thinking and statistical learning theory as a basis for which to understand the accuracy and error rates of polygraph testing and decision models.

In the absence of adequate education and training in science and statistical decision theory, polygraph examiners have found that most short term practical and operational questions can be alleviated simply by gaining admissions and confessions, and by emphasizing the practical value of the admissions and disclosure instead of and to the exclusion of emphasis on the test result. At the same time, polygraph professionals, who may have simultaneously harbored false hopes for deterministic perfection, while working operationally with an imperfect test, have tended to appear to critics as both unrealistic and insecure about the probabilistic realities of the polygraph test result. Some simple questions illustrate this point. Are we to assume – given a sufficiently expert examiner and the absence of any admission or confession – that the test result is perfect? And what do we have if we have only a test result? Should a result without an admission or confession be considered automatically to be an error? Should a deceptive test result be considered automatically inconclusive? If not, automatically inclusive, and if not perfect, how bad or how good is a deceptive test result without a confession?

To be perfectly clear, admissions and confessions have great practical value; they have

such great practical value that we seem to have allowed ourselves to become placated with their usefulness. If we could get admissions or confessions at each and every single deceptive examination then the test result would never matter. But we have sometimes tended to appear insecure about the value of the test result when all we have is a test result, when we have no admission or confession. This is a problem of our own creation, that has occurred as a direct result of our own attitude of dissatisfaction when we have a test result without an admission or confession. The fallacy in our thinking has been that admissions or confessions validate the test result – but we have largely ignored the fact that admissions and confessions are not of themselves sufficient to validate a test in a scientific way. Validation must be independent of the test, whereas confessions are largely dependent on the test. We have sometimes neglected to remember that a test is valid regardless of admission or confession. This is not to suggest perfection. Validity implies only that we can quantify the margin of error or uncertainty surrounding our conclusion.

New scientific technologies for lie detection and credibility assessment will most likely not emphasize the admission or confession as the basis of validity. Instead they will point to the published scientific evidence of validity. They will make no apologies and they will exhibit no insecurities around the probabilistic nature of the objective test result. They will simply describe the known margin of error and uncertainty.

What then is the scientific value and meaning of the polygraph test result when we can neither pretend perfection nor endorse expectations for perfection? The answer is to describe the test results using the common language of scientific testing: probability theory and statistical learning theory. The answer is to study polygraph accuracy and develop test data analysis models for which we can easily and expediently describe the test result in terms of a realistic probability of error and realistic confidence intervals. The answer is to study our testing and analytic models to verify that our calculated estimates of the probability or proportions of errors will in fact agree with observed factual evidence that describes the occurrence of testing errors. The answer is to verify that our normative data, for the populations of persons who undergo polygraph testing, are realistic and generalizable estimates of the expected numerical and probabilistic test results. The answer is to study our target selection models so that test data and results can be verified as contributing to desired risk assessment and risk management outcomes. In this way, we can be capable of – and in fact we are today – describing polygraph test results in a realistic and probabilistic way that is consistent with the concepts and principles of scientific testing. And while we have made great progress during the last 50 years, and especially recent years, there is always more to do.

Polygraph, though it has always been capable of high accuracy, will have to compete with new and emerging technologies. One prominent feature of new and scientific technologies for lie detection and credibility assessment will be – with the exception of pseudoscientific methodologies – that we can expect them refrain from claims of perfection. Instead they will emphasize high probabilistic accuracy rates that are less than perfect, but with known and quantified margins of error and uncertainty. Another feature will be automation, in both test administration and test data analysis. The value and advantage of automation is consistency in test administration, reproducibility of the analytic results, and reliability rates that are likely to be capable of exceeding the reliability of non-automated testing and analytic procedures. In short, the advantage of automation is objectivity vs the potential for human error and subjective human bias with non-automated test administration and non-automated analysis methods.

In reality, automation does not imply perfection: automated procedures can still include procedural error, and automation does not eliminate issues around suitability for testing. Automation does not eliminate the role of random variance and random error. Automation will simply reduce human error, and can make human attention more available for human information tasks that cannot be automated. Automated test administration and automated analytic models can eliminate social and administrative questions and concerns related to human error and human bias. Automated analysis methods offer the potential for the reliable use of sophisticated statistical and computational solutions that would be impossible to achieve reliably through visual analysis. A challenge for automation will be to develop testing and analysis models that can reliably handle the variety of complications that can occur with complex or high-dimensional data. This is not an insurmountable challenge, and numerous fields of science are working successfully today with high-dimensional data. Computers and analytic tools available today are capable of far more than they were even five and 10 years ago. Just take a moment to consider how many complex data problems have been described in scientific publication in the areas of facial recognition and other pattern recognition, and then take a moment to imagine the application of these statistical and machine learning methods to the pattern recognition context of lie detection and credibility assessment. We could choose to ignore it, but it is not going to go away. If we do chose to ignore it, in doing so we will choose to ignore our own future. What then will we say to people who want a more completely objective lie detection technology that is much less susceptible to human bias? The best answer will be for polygraph professionals to continue to make use of 21st century technology, and to achieve an optimal balance and integration of automated and human testing and analytic tasks in a manner that may likely outperform either one alone.

Recently, I have begun to hear some examiners express their concern that increased reliance on science will mean they will be reduced to mere technicians and that they will not be allowed to interview or interrogate. These concerns are – in my view – unfounded and misplaced. These concerns amount to a persistence of misunderstanding of validity in the scientific testing context, and a persistence in avoidance of probabilistic models as a basis of scientific validity. Moreover, they amount to a form of self-absorbed fear that they will not be permitted to interview or interrogate in the context of a scientific test result. There is greater risk in neglecting to make use of automation wherever possible. In reality, interviewing and interrogation are two human activities for which we do not yet foresee the potential for complete automation. These activities therefore represent the areas of greatest potential importance for examiner skill development and training. But this does not negate the need for structured and quantitative testing models. Instead, it is more likely that our future will involve the effective integration of interviewing and interrogation strategies into testing models for which repetitive, detailed, and error-prone technical tasks are subjected to automation. Automation will that the human energy and human attention of the subject-matter expert is more available to devote to the information tasks that cannot be automated. In short, we should not be afraid to automate most or all of the boring technical stuff, and focus the efforts of human experts on the irreplaceable human tasks. From my perspective there is little danger that interviewing and interrogation will become antiquated and neglected skills. So long as interviewing and interrogation are both effective and ethical then expert interviewers and expert interrogators will continue to be needed.

If we are going to ever see the expansion of polygraph testing into other areas of risk assessment and risk management – such as professionals and para-professionals who work directly with vulnerable children – then we are going to be challenged to convince public policy makers and funding sources as to why they should continue to choose polygraph as the preferred method for scientific lie detection and credibility assessment when there exists objective and automated newer technologies that can alleviate questions about human bias and provide scientific results without apology for the known probabilistic margin of error. The best potential alternative will be for the polygraph profession to emphasize the integration of more rigorous probabilistic and objective science and automation, and add to that the information that subject matter experts can obtain in the form of admissions and confessions from the human interview and interrogation context.

Polygraph in the next 50 years will need to compete like never before with other scientific

technologies for lie detection and credibility assessment. My suggestion is to learn to understand and actually make use of new technologies. It is my belief that the future of the polygraph will be at risk if we do not continue to rapidly increase our competence and education around science, probability theory and automated analytic models. If we choose not to compete - or if we choose to compete with new scientific technologies using ideas and principles that are inconsistent with scientific evidence, or if we choose to compete using methods and hypothesis that were innovative 50 years ago and grossly inadequate today – then we will be at risk for becoming uncompetitive. Our old sources of comfort – that the expertise of the examiner cannot be replaced, or that the admissions and confessions will always be sufficient to divert questions away from concern about the accuracy of the test result – are at risk for becoming much less effectively comforting in a context in which automated technologies can produce similar accuracy rates, and in which there is no insecurity about the probabilistic nature of the test result. The choice to neglect or reject science will be an invitation for the polygraph profession to experience some future disruption.

Hope to see you all in Chicago. It is a great city and a beautiful hotel. A great time is sure to be had by all, and there is so much to learn and do.

As always,

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Board of Directors' Reports

Walt Goodson
President Elect

Coming together is a beginning; keeping together is progress; working together is success. - Henry Ford

Ladies and Gentlemen, there's a lot of work to be done if we want to maintain our high level of success. Although, before I get started on that thought, I want to make a couple of quick points regarding the recent changes to our bylaws and constitution.

Hopefully, by now you have seen our new bylaws and are pleased with the work product. The final product is the result

of recommendations from the GKG Law Firm and countless hours of work by members of the APA Board of Directors (BOD). Late last year, the BOD retained the GKG Law Firm to conduct a corporate review of our governing documents. This is done every decade or so, to ensure the APA is compliant with state and federal law. Per the recommendations of the law firm, the most substantive change made by the BOD was to combine the bylaws and constitution into a single governing document. This is a more modern approach to governing organizations and removes the potential conflict between the documents. This final work product was unanimously approved by the BOD. Most other changes to the bylaws were minor and intended to clarify the intent of the document. A couple of the changes with some significance to the APA include changing the three vice-president positions to director positions. This was done since all members of the BOD serve the entire membership and not a particular constituency such as government, law enforcement or private members. Moreover, any member was permitted to run and be elected to any of those positions regardless of which membership demographic they belonged. This change provides more of an opportunity for any member to run for any position on the BOD. These re-titled director positions will also serve two year terms. This is critically important because if you have ever served as a member of the BOD, you are keenly aware there is a huge learning curve for new board members and all reality, it takes the second year to get your agenda accomplished. This last point was the catalyst for a second change to the bylaws. This change requires members seeking election to the position of president-elect to have previously served as a member of the BOD. It was a unanimous conclusion of the BOD that prior BOD experience is critical to be effective in this highest position. This is also a less restrictive requirement than other professional associations, like the American Psychological Association, that requires their president-elect to be nominated from their current board of directors. All of these aforementioned changes will be presented to the membership for their consideration during the business meeting at the Annual Conference in Chicago.

Now let's discuss our future. One thing I hope you know about me by now is I don't come from a background in the hard sciences, or even soft sciences for that matter. I've been a police officer my entire career, so I see things mostly through that lens. I completely agree that conformity to scientific best practices will give us credibility and elevate our profession;

however, I also think that economics plays a role in almost everything and thus the consumer always determines one's fate. Therefore, while many past presidents have focused on raising the level of our profession through urging conformance to scientific best practices, this is not my strong suit. Instead, I hope to use my organizational and leadership experience to make us stronger, more efficient and more effective as both an association, as well as a profession.

There are many things I hope to accomplish during my tenure as your president. Thus, I have worked with incoming President-Elect Patrick O'Burke to develop a five year strategic plan. This plan has already been submitted to the BOD for their recommendations, as well as to get them engaged in accomplishing the goals set out in the plan. President-Elect O'Burke and I worked to address some of the following questions during the development of this plan:

- Is our bifurcated membership model the best for the organization and profession? In other words, are full and associate members that are distinguished by a college degree the best way to encourage college degrees and education?
- How does the APA increase membership renewals each year?
- How do we encourage new examiners to join the APA?
- Is there a good way to incentivize continuing education such as using tiered certificates?
- Is it time to have our school accreditation process handled by a staff position?
- How do we continue to improve the efficiency and effectiveness of our National Office and BOD?
- Why don't we have a policy manual for all regular functions carried out by the BOD like elections, IT, web privacy, conflicts, operations, etc.?
- Could we market ourselves more effectively?
- Is there a better way for us to encourage compliance with our Code of Ethics and Standards of Practice?
- Is there a more effective way for us to serve our international membership?

With these questions in mind, we developed a rough draft of a strategic plan. The broad goals of the plan include improving customer service (our customers are our members), increasing our influence and raising our educational standards. Following the goals are six specific strategies to accomplish them. I hope to publish a more specific strategic plan in the fall with the specific benchmarks we hope to achieve.

Goals:

Customer service will be accomplished through improved and expanded communications between the APA and its membership, enhancing APA web capability and the refinement of APA business practices. The refinement of business practices will include the development of comprehensive policies and standard operating procedures as well as transferring many routine operational duties from the Board of Directors (BOD) to a centralized National Office staff. Success for this goal will be measured by increases in online interaction by the membership and decreased operational expenses.

Influence will be accomplished through the intelligent growth of our membership, showcasing the polygraph as a critical public safety tool and raising the professional standards of the BOD and the Association. Elevating the professional standards of the Association will include movement from regulation and enforcement to a voluntary compliance model. Success for this goal will be measured by increases in membership, increases in membership participation in APA committees and leadership and fewer complaints investigated by the Ethics and Grievance Committee for alleged violations of the APA Standards of Practice and Code of Ethics.

Educational standards improvement will focus on methods to increase continuing education among APA members and increase the percentage of polygraph examiners entering the profession with college degrees. This will be accomplished by offering and incentivizing continuing education opportunities through tiered certifications and continuing to refine school accreditation processes. Success for this goal will be measured by increases in the number of polygraph examiners entering the field of polygraph with college degrees and increases in the number of hours of continuing education obtained by our members each year.

Strategies:

1. Increase the strength and influence of the APA through the intelligent growth and retention of APA membership.

2. Raise the level of the polygraph profession through formal and continuing education as well as continuing the effectiveness of the APA school accreditation.

3. Increase the overall efficiency and effectiveness of the Board of Directors and National Office staff through refining business practices and developing comprehensive standard operating procedure manuals.

4. Improve the image of the APA and the polygraph profession by promoting polygraph as an essential public safety

tool.

5. Improve the professionalism of APA membership through a shift from a regulatory mindset to one that recommends and encourages compliance with best practices.

6. Ensure international member compliance with APA Standards of Practice and Code of Ethics by empowering the international membership to self-regulate.

I look forward to working with the new BOD in Chicago to begin accomplishing these goals. I also look forward to discussing these issues and exchanging ideas with you on how to best accomplish them.

On a final note, I want to thank our Editor, Mark Handler for his dedicated work to move the APA to a new website. Mark has worked around the clock to upload a tremendous amount of content to the new site. Of course a few bugs in the beginning; however, this new website will be better in too many ways to count. Besides improved look and feel, it works better with mobile devices, it simplifies online payments of dues and fees, it's easier to navigate and it allows for members to create individual profiles (if they choose.) However, the best part of the site is what you cannot see, it's cheaper to operate than our previous site and it has tools along with a dashboard that helps our National Office staff manage membership information and payments.

As always, thank you for your dedicated service to your communities and the professionalism in which you approach these indispensable duties every single day. It's a great joy to be a part of your team.

George H. Baranowski
Director

I want to begin by conveying the most sincere expression of appreciation that I can deliver for the degree of confidence shown by all of you, in re-electing me to represent you. It is an honor to serve the goals of this great organization. I promise I won't let you down. There are so many great things happening not only in our association but our profession as well. I am looking forward to a number of these significant happenings at the most momentous time in our association's history, "Our 50th Anniversary of the American Polygraph Association."

I feel this year's conference will be one that will be talked about and remembered for years to come. It will entail some significant improvements,

up-dated undertakings, a wonderfully revised and restructured website, manned by Mark Handler, one of the most scientifically and technically savvy professionals I know. That in itself is remarkable, however a number of other accomplishments will also be presented and established to increase the proficiency of our association as well as our profession.

There are many commendations that could be expressed to members of the Board of Directors who have made these objectives possible, and they would most certainly include veteran board members Nelson, Cushman, Slupski, O'Burke, McCloughan, Dutton, Goodson and Gougler to name a few who have been on the board for some time, as well as former board members Shaw and Krapohl. But board members who don't often get recognized include our General Counsel Gordon Vaughn, whose assistance is immeasurable. You have no idea of his value unless you have witnessed Mr. Vaughn in action. Another is our National Office Manager Lisa Jacocks. She has stepped up in this position with innumerable ways to elevate and enhance the proficiency of the National Office. Another often overlooked member is our Treasurer Chad Russell. The membership seldom sees the outstanding effort and skill that our Treasurer possesses and typically only has contact with him at the conference registration desk.

I did not intend this report as a testimonial to the Board itself, but I think we all need to recognize the talents that went into creating historical changes such as the Criterion for Validated Polygraph Testing Techniques, up-to-date By-Laws, an updated Professional Website, Code of Ethics and so many other advances. I am proud to be a Director on this Board and look forward to even more positive accomplishments for the future.

In closing, I want to again thank the membership for the faith you have shown in me to represent you in our association. I value this honor and I welcome any concerns, comments or feedback. Please contact me by email; director3@polygraph.org

William L. Fleisher
Director

As I finish my term, I want to thank my fellow APA members for allowing me the honor to serve them as APA Director #5 for these past two years. It has been an education.

I am proud to have been a member of the Board which worked so strenuously

to produce the new APA By-Laws. These will be offered for your approval this coming September at our Annual Training Seminar in Chicago. I heartily endorse them and hope that it will voted on and passed.

Please know that your APA is strong and healthy. It will be so for many, many years to come. I am grateful to have been to serve you as a Director of this great organization.

I also want to take this opportunity to congratulate Steve Duncan on his election as Director #5. Steve is an experienced and accomplished polygraph examiner who will be a wonderful addition to the Board.

To all my APA colleagues, I wish you all good health and productive polygraph careers. Adios – Bill Fleisher

Lisa K. Jacocks
Secretary

The Board of Directors of the American Polygraph Association on July 16, 2015 unanimously voted to recommend the repeal of the current APA Constitution and By Laws in favor of adoption of the following ByLaws. This recommendation will be sudmitted for consideration and vote by the APA General Membership at the General Membership meeting to be held on Tuesday, September 1, 2015 at the Palmer House Hilton, in Chicago, Illinois at 10:00 am.

BYLAWS

AMERICAN POLYGRAPH ASSOCIATION
September 1, 2015 (Effective Date)

Article I. Mission

1.1 The American Polygraph Association (APA) is a professional organization that exists to provide training, best practices, and professional resources for the continued growth of ethical and evidence based detection of deception through the use of polygraph. The APA membership consists of professional polygraph examiners, educators and researchers who share a common commitment to the public interest through the development, communication and promotion of valid and ethical polygraph practices.

Article II. Prior Actions

2.1 No action of proceeding commenced before these Bylaws take effect, and no right accrued, is affected by the provisions of these Bylaws, but all provisions thereafter taken herein shall conform to the provisions of these Bylaws.

Article III. Membership

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 standards in place at the time of graduation;

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

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 the Council on 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; 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 as the 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.1 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

3.3 Life Member

3.3.a Life Members are any persons who:

3.3.a.i Have been nominated by another APA Member for Life Membership status;

3.3.a.ii Whose nomination has been approved by at least a two-thirds (2/3) vote of the APA Board of Directors at which a quorum is present;

3.3.a.iii Whose nomination has been confirmed by a majority vote of all APA voting Members present at a meeting of the General Membership; and

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

3.3.b Life Members shall:

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

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

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

3.3.b.iv Be exempt from annual membership dues to the APA

3.4 Science and Technology Membership

3.4.a Science and Technology Members are those persons who have demonstrated professional or scientific interest in promotion and advancement of the polygraph profession through polygraph research or instrumentation.

3.4.b Science and Technology Members shall:

3.4.b.i Not have the right to vote in matters before the General Membership;

3.4.b.ii Not be eligible to hold any elective office in the APA;

3.4.b.iii Be eligible to serve on any Standing or Ad Hoc Committee;

3.4.b.iv Meet all APA financial obligations required of Science and Technology Members; and

3.4.b.v Abide by APA's Code of Ethics and the APA Standards of Practice

3.5 Honorary Members

3.5.a Honorary Members are those persons who:

3.5.a.i Have made an outstanding contribution to the APA and the polygraph profession;

3.5.a.ii Have been nominated by a voting member for Honorary Membership

3.5.a.iii Has had their nomination approved by at least a two-thirds (2/3) vote of the Board of Directors at which a quorum is present;

3.5.a.iv Whose nomination has been confirmed by a majority vote of all APA voting Members present at a meeting of the General Membership; and

3.5.a.v Abide by the APA's Code of Ethics and the APA Standards of Practice

3.5.b Honorary Members shall:

3.5.b.i Not have the right to vote in matters before the General Membership;

3.5.b.ii Have the right to speak on any issue before the General Membership of the Board of Directors:

3.5.b.iii Not be eligible to hold any elective office in the APA;

3.5.b.iv Be eligible to serve on any Standing or Ad Hoc Committee; and

3.5.b.v Be exempt from annual membership dues to the APA

3.6 Retired Members

3.6.a Retired Members are those persons who:

3.6.a.i Are at least 65 years of age;

3.6.a.ii Are receiving and expect to receive no more than nominal compensation in connection with polygraph employment;

3.6.a.iii Have been members of the APA for at least twenty (20) years;

3.6.a.iv Have attended a minimum of five (5) APA annual seminars;

3.6.a.v Has had their nomination approved by a least o two-thirds (2/3) vote of the Board of Directors at which a quorum is present;

3.6.a.vi Has had their nomination confirmed by at least a majority vote of all APA voting Members present at a meeting of the General Membership.

3.6.b Retired Members shall:

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

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

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

3.6.b.iv Be eligible to serve on any Standing or Ad Hoc Committee;

3.6.b.v Abide by the APA's Code of Ethics and the APA Standards of Practice;

3.6.b.vi Be exempt from annual membership dues to the APA.

3.7 Divisional Affiliate

3.7.a Divisional Affiliates are only those not for profit polygraph professional membership organizations or associations who desire a professional relationship with the APA and whose members agree to abide by the APA Code of Ethics and the APA Standards of Practice. No individual may claim APA membership as a result of being a member of a Divisional Affiliate. An applicant for Divisional Affiliate shall:

3.7.a.i Deliver a copy of its then current bylaws (or the equivalent thereto) to the APA and, if granted membership by the APA, immediately provide the APA with subsequent revised versions of such bylaws; and

3.7.a.ii Be granted Divisional Affiliate status upon at least a two-thirds (2/3) vote of the Board of Directors at which a quorum is present.

3.7.b Divisional Affiliates shall:

3.7.b.i Be autonomous in all matters, but must be in with the APA Code of Ethics and the APA Standards of Practice;

3.7.b.ii Maintain financial accounts and records separate and apart from the APA;

3.7.b.iii Not bind the APA to any financial commitment or responsibility; and

3.7.b.iv Have their Divisional Affiliate status revoked upon a two-thirds (2/3) vote of the Board of Directors at which a quorum is present if such member:

3.7.b.v.A Fails to subscribe to or enforce upon its members the APA Code of Ethics and APA Standards of Practice; or

3.7.b.v.B Fails to hold a meeting of its membership within a twelve (12) month period.

3.8 General Membership Provisions

3.8.a Subject to the terms and conditions of this Article III, any Member's membership status with the APA shall be terminated upon his, her or its conviction of any felony crime or its equivalent. For the purpose of this Section 3.8.a, conviction shall mean the judgment of any court of competent jurisdiction, local, state or federal and shall include a guilty plea, a pleas of "no contest" or nolo contendere.

3.8.b Any Member who has been formally charged in any court of competent jurisdiction on a charge amounting to a felony crime or its equivalent shall, within ten (10) days of such charge, notify the APA Chairperson of the Ethics and Grievance Committee of such charge. Notification shall be in writing and shall include the nature of the charge, the name and address of the court where the Member was charged, the date of the charge and the case or docket number assigned by the court. Any Member who fails to comply with the provisions set forth in this section may be immediately suspended by the Ethics and Grievance Committee or Board of Directors in their sole discretion.

3.8.c The Board of Directors may suspend or terminate a Member's membership status with the APA for:

i. any act contrary to the provisions of the APA Code of Ethics and the APA Standards of Practice;

ii. failure of any Member to meet his, her or its financial obligations to the APA when due; or

iii. conduct which brings discredit to the APA or the polygraph profession.

3.8.d The membership status of any Member who resigns from the APA shall be reinstated upon approval of the Members Services Committee or the Board of Directors; provided that the Member:

3.8.d.i Qualifies for the class of membership to which he or she was qualified for at the time of resignation;

3.8.d.ii Meets all APA financial obligations for the year in which reinstatement is sought; and

3.8.d.iii Was not the subject of an unresolved investigation by the Ethics and Grievance Committee at the time of his, her resignation. Any such unresolved investigation must be resolved prior to reinstatement.

3.8.e Any applicant for APA membership or Associate Member in the process of becoming a Full Member will not be eligible for such membership status until all current grievance investigations are satisfactorily resolved.

3.8.f All Members shall comply with the APA Code of Ethics and the APA Standards of Practice.

3.8.g Changes or additions to classes, qualifications, and rights and privileges of any and all APA Membership classes must be recommended by at least a two-thirds (2/3) of the Board of Directors. These changes or additions must be approved by a majority vote of all voting Members present at any meeting of the General Membership at which a quorum of voting Members is present.

3.9 General Membership Meetings, Voting, Dues and Special Assessments

3.9.a Each voting Member shall be entitled to one (1) vote on each matter submitted to the membership

3.9.b The General Membership shall meet once each calendar year for a General Membership Meeting in conjunction with the Annual Seminar

at which time it shall act on all business brought before it. The General Membership may elect to meet at any other time for any other purpose. The Board of Directors shall establish the date, time and place of the Annual Seminar and General Membership Meeting.

3.9.c Special General Membership meetings may be called by the Board of Directors or by not less than ten percent (10%) of voting Members. The Board of Directors shall designate the place of any Special General Membership meeting.

3.9.d Notice stating the place, day, and time of any general Membership Meeting shall be sent by mail, publication in the APA journal or Newsletter or other method of member communication, to Members, no less than seven (7) days before the date of such meeting. In case of Special General Membership Meetings, or when required by statute or by these Bylaws, the purpose for which the meeting is called shall be stated in the notice.

3.9.e For purposes of any General Membership Meeting a quorum requires no less than five percent (5%) of the voting members to be present. Unless otherwise provided in these Bylaws, a majority of the voting Members present shall be sufficient to carry any motion. All votes shall be taken by either a voice vote or a show of hands unless the motion requires a vote by secret written ballot.

3.9.f Any Member shall be entitled to speak on the floor at any meeting of the General Membership. Only voting Members shall have the right to vote upon motions. Elections or any other business brought before the General Membership.

3.9.g Member and Divisional Affiliate dues shall be established by a majority vote of the Board of Directors. Dues shall be levied against all members on an annual calendar year basis and in equal amounts within each dues paying class of members. Dues shall be levied against all Divisional Affiliates on an annual basis. The Board of Directors may establish policies and penalties for late payments.

3.9.h Special assessments may only be established and levied by the Board of Directors, provided that no single special assessment shall exceed the amount of dues levied in the year in which the special assessment is imposed. All members except Life, Retired and Honorary Members may be subject to any special assessment.

3.9.i Any Member who fails to meet financial obligations to the APA within 90 days of the due date for payment shall be suspended without action of the Board of Directors until the next meeting of the Board of

Directors at which time the Board of Directors may, in its sole discretion, remove the suspension, revoke or continue the suspension, or terminate, the membership of such Member.

3.9.j When it is inexpedient to call a meeting of Members, a vote by mail or via electronic telecommunication on any question on which an expression is deemed necessary may be directed to be taken by the President with the approval of at least four (4) Directors. Notice of the result shall be given to all Members within thirty (30) days of completion of the vote.

Article IV. Board of Directors

4.1 Responsibility. The Board of Directors is responsible for the administration of the affairs of the APA and is authorized to take any action necessary to protect the best interests of the APA.

4.2 Composition. The Board of Directors shall be comprised of eleven (11) voting members and shall consist of:

a. The President
b. The President-Elect
c. The Immediate Past President
d. Eight (8) Directors

4.3 Ex-officio Members. There shall be ex-officio members of the Board of Directors. Ex-officio members must be nominated by the President and confirmed by at least two-thirds (2/3) of the Board of Directors at which a quorum is present. Ex-officio members of the Board of Directors may attend all meetings of the Board of Directors, but shall have no vote in matters before the Board of Directors. Ex-officio members of the Board of Directors shall include, bur are not limited to:

a. Treasurer
b. General Counsel
c. Editor in Chief
d. National Office Manager/Secretary

4.4 Term. Each Director shall serve a term of two (2) years or until the next meeting of the General Membership thereafter and may be reelected to consecutive terms. Four (4) of the Directors shall be elected to office in years ending in even numbers and Four (4) of the Directors shall be elected to office in years ending in odd numbers.

4.5 Vacancy. In the event of death, resignation or the inability to act of any Director, the Board of Directors shall immediately appoint any voting

Member to serve the unexpired term of the deceased, resigned or disabled Director. A vacancy in the office of the President shall be filled by the immediate succession to that office of the President- Elect for the balance of the term remaining, and one (1) year thereafter, or until a successor is duly qualified. Any vacancy in the office of the Immediate past President will result in the duties of that office being assumed by the President, who will retain rights as a voting member of the Board while serving as Chairperson of the Board for the unexpired term, or until a successor as President is duly qualified. A vacancy in the office of the President-Elect will be filled by vote of the Board of Directors from among its members, or any duly qualified Member in good standing. Nomination of one (1) or more candidates may be made by any voting member of the Board of Directors, and unless there is only one (1) candidate, where voice vote shall suffice, voting shall be by secret ballot with a majority vote of those voting necessary to elect. In the event no single candidate receives a majority vote on the first or subsequent ballots, the two (2) candidates, plus ties, receiving the most votes shall be voted on the next ballot. The person elected shall serve the balance of the term remaining and automatically shall become the President at the next annual General Membership Meeting.

4.6 Resignation or Removal. Any Board Member may resign and such resignation shall take effect (a) at the time specified in the notice of resignation or (b) if unspecified, at the time set by the Board of Directors in accepting a resignation. Any elected Officer or Director may be removed by at least a two-thirds (2/3) vote of the entire Board of Directors or two-thirds (2/3) vote of the voting Members at any General Membership Meeting or a duly convened Special Meeting at which a quorum is present. Any non-elected officer or Ex-Officio Board Member may, during their term of appointment, be removed from their office by a majority vote of the Board of Directors

4.7 Meetings and Voting.

4.7.a The Board of Directors shall convene annually within seven (7) days prior to the Annual Meeting of the General Membership and, at such other times and places as may be necessary.

4.7.b Special meetings of the Board of Directors may be called by or at the written request of the Chairperson of the Board or through petition of at least a majority of the members of the Board of Directors. The Board of Directors may fix any place as the place for holding any special meeting of the Board of Directors. No vote shall be taken by the Board of Directors in the absence of a quorum.

4.7.c Notice of any special meeting of the Board of Directors shall be received by each Board Member by mail, overnight courier, facsimile,

or other mode of written or transmittal, not less than three (3) days before the time set for such a meeting, and must include the time, date, place and purpose of such meeting. Any Director may waive notice of any meeting before, at or after such meeting.

4.7.d Unless otherwise prohibited by law, any action to be taken at a Board of Directors meeting may be taken through the use of electronic media, including conference telephone or other communications equipment by means of which all person participating in the meeting can communicate with each other simultaneously. Participation in such a meeting shall constitute presence in person.

4.7.e Unless otherwise prohibited by law, any action to be taken or notice delivered under these Bylaws may be taken or transmitted by electronic mail or other electronic means; and, any action or approval required to be written or in writing may be transmitted or received by such means.

4.7.f A majority of the Board of Directors in office shall constitute a quorum for the transaction of business at any meeting of the Board of Directors, provided, that if less than a majority of the Directors are present at said meeting, a majority of the Directors present may adjourn the meeting from time to time without further notice.

4.7.g The act of at least a majority of the Directors present at a meeting at which a quorum is present shall be the act of the Board of Directors, except as otherwise provided by law or by these Bylaws. Each Director shall be entitled to one (1) vote on all matters submitted to a vote of the Board of Directors.

4.7.h Meetings and official communications of the Board of Directors shall be conducted in English.

4.8 Indemnification. The APA shall provide a defense to and indemnify any and all of its Board and Committee Members, or former Board and Committee Members against expenses actually and necessarily incurred by them in connection with the defense of any action, suit, or proceeding in which they or any of them are made parties, or a party, by reason of having been Board and Committee Members of the APA, except in relation to matters as to which any such Board and Committee Member has been adjudged to be liable for willful neglect or misconduct in the performance of duties. Such indemnification shall not be deemed exclusive to any other rights to which those indemnified may be otherwise entitled.

Article V. Nominations of President Elect and Directors

5.1 Nominations of President Elect. Any Member qualified under Article III to hold APA elected office and who has previously served on the Board of Directors may have his or her name appear on the ballot if nominated by at least (1) voting Member. A voting Member may self-nominate. The nomination shall be made in writing and submitted to or received by the APA's National Office at least ninety (90) days prior to the commencement of the APA annual seminar. Any form of written communications (e.g., electronic, facsimile, etc.) is acceptable, provided the communication can be authenticated, if necessary.

5.1.a With the exception of self-nominees, the Immediate Past President shall notify each President Elect nominee in writing of his or her nomination no later than eighty five (85) days prior to the commencement of the APA annual seminar. Within two (2) business days of notification, nominees must notify the Immediate Past President in writing of his or her acceptance or rejection of the nomination. If the nominee does not timely and properly notify the Immediate Past President, the nominee will be deemed to have rejected the nomination.

5.2 Nominations of Directors Other Than President Elect. Any Member qualified to be a Director may have his or her name appear on the ballot to be a Director if nominated by at least (1) voting Member. A voting Member may self-nominate. The nomination shall be made in writing and submitted to APA's National Office at least ninety (90) days prior to the commencement of the APA annual seminar. Any form of written communication (e.g., electronic, facsimile, etc.) is acceptable, provided the communication can be authenticated, if necessary.

5.2.a With the exception of self-nominees, the Immediate Past President, or his or her designee, shall notify each Director nominee in writing of his or her nomination no later than eighty five (85) days prior to the commencement of the APA annual seminar. Within two (2) business days of the notification, nominees must notify the Immediate Past President in writing of his or her acceptance or rejection of the nomination. If the nominee does not timely and properly notify the Immediate Past President, the nominee will be deemed to have rejected the nomination.

5.3 A nominee shall only compete for a single President Elect or Director position in any one (1) election year. If nominated for more than one (1) position, the nominee must submit in writing to the Immediate Past President at the APA National Office which position the nominee wants to be considered. Such notice must be provided within two (2) business days of

such nominee's receipt of notification about his or her nominations. It the nominee does not timely and properly notify the Immediate Past President about which position he or she wants to be considered, the nominee shall not be places on the ballot for any elected office in that election year.

5.4 The Immediate past President, or his or her designee, shall notify all President Elect and Director candidates in writing about the results of the election.

Article VI. Election Procedures for President Elect and Directors

6.1 With the exception of run-off and elections described in Sections 6.5, 6.6 and 6.8, elections shall be conducted by electronic ballot and complete by no later than sixty (60) days prior to the commencement of the APA Annual Seminar.

6.2 The electronic ballot shall list the candidates for the President Elect and each Director position in alphabetical order by last name.

6.3 Each voting Member shall be entitled to cast one (1) electronic ballot for any vacant President Elect or Director position.

6.4 The election period shall remain open for seven (7) calendar days for all elections held electronically.

6.5 If no candidate wins more than fifty percent (50%) or more of the vote for the President Elect or Director position, a runoff election shall be completed no later than thirty (30) days prior to the commencement of the APA annual seminar.

6.5.a The runoff election shall include only the two (2) candidates receiving the most votes unless there is a tie among more than two (2) candidates for the two (2) ballot positions, in which case:

6.5.a.i In a tie for the most votes, only those candidates with the most votes shall appear on the ballot regardless of their number; and;

6.5.a.ii In a tie for the second-most votes, the runoff ballot shall include the candidate with the most votes and all those candidates tied for second-most votes.

6.6 If no candidate in the runoff election wins at least fifty percent (50%) of the vote for the President Elect or Director position, a final vote will be taken for

all of the candidates on the runoff ballot during the APA General Membership Meeting at the annual seminar.

6.7 Any candidate wishing to contest the election results must submit a formal, written petition to the Board of Directors no later than seven (7) days before the next General Membership Meeting setting forth all pertinent information. If the matter is not resolved by the Board of Directors to the satisfaction of all parties directly concerned it shall be presented to the General Membership during the General Membership Meeting for final disposition.

6.8 If, after the timely and proper request of any candidate for the President Elect or Director position, the Board of Directors deems an election to be null and void, the Board of Directors may authorize an election from the floor at the General Membership Meeting.

6.9 The Board of Directors will officially certify the election results at the next at the next General Membership Meeting.

6.10 The President Elect and Directors shall take office immediately upon taking the oath of office at the Annual Seminar and General Membership Meeting.

6.11 Amendments to the Election Procedures may be made only as follows:

6.11.a By at least a two-thirds (2/3) vote of all voting Members at a meeting of the APA General Membership

6.11.b Notwithstanding anything set forth in Section 6.11.a above, the Member Services Committee, with the approval of the Board of Directors, may make purely administrative or clerical changes to the Election Procedures in order to effectively and efficiently carry out the intent and purposes of the Election Procedures. In such event, the decision of the board of Directors shall be final.

6.11.c Election Procedure amendments approved by the Board of Directors shall be submitted by the Secretary to the Membership in accordance with the procedures set forth in these Bylaws, as applicable.

Article VII. Officers and Ex Officio Members

7.1 President. The President shall serve as President for one (1) year and subsequently and automatically for (1) year as Immediate Past President.

The President may not serve as President for consecutive terms. The President shall:

7.1.a Preside over all meetings of the APA General Membership;

7.1.b In the absence of the Chairperson of the Board, preside over all meetings of the board of Directors;

7.1.c Have general supervision over the affairs and administration of the APA and of the duties of those appointed to office;

7.1.d Perform such duties as the Board of Directors may assign;

7.1.e Represent the APA at all official APA functions; and

7.1.f Appoint the Chairpersons of all Standing or Ad Hoc Committees.

7.2 President Elect. The President Elect shall serve as President Elect for one (1) year and shall automatically become President after his/her term as President Elect terminates. The President Elect shall:

7.2.a Assist the President in the performance of his or her duties;

7.2.b Discharge the duties of the President in the event of the President's, absence, disability, or refusal to act; and

7.2.c If the office of the President becomes vacant for any reason, the President Elect shall succeed to the Presidency until the expiration of the President's remaining term and for the term of one (1) year thereafter, or until a successor is duly qualified.

7.3 Immediate Past President. The Immediate past President shall:

7.3.a Serve as Immediate past President for one (1) year and automatically shall become Immediate Past President after his or her term as President terminates;

7.3.b Be the presiding Chairperson at Board of Directors' meetings but shall not be a voting member thereof except in cases of a tie;

7.3.c Shall call a meeting of the Board of Directors upon request of the President, or as may be required by majority vote of the Board of Directors;

7.3.d Shall undertake such other duties as may be assigned by the President or the Board of Directors.

7.4 Treasurer. The Treasurer shall:

7.4.a Be the primary custodian of all funds and securities, of whatever nature, which are the property of the APA and shall provide copies thereof to the National Office Manager;

7.4.b Maintain complete and accurate records of all financial transactions related to the APA;

7.4.c Be authorized to act in all financial matters wherein an authorized signature is required on behalf of the APA. The President may act as the Treasurer in the absence or disability of the Treasurer;

7.4.d Select an independent Certified Public Accountant, approved by the Board of Directors, to perform a certified annual audit of APA's records and financial transactions and report the results to the General Membership at the Annual Business Meeting;

7.4.e Prepare a Statement of Assets and Liabilities as well as a Statement of Income and Expenses of the APA on a quarterly basis and deliver both statements to the Board of Directors;

7.4.f Collect all dues authorized by the General Membership and all assessments levied by the Board of Directors;

7.4.g Provide a bond in an amount deemed appropriate by the Board of Directors. The bond shall be payable to the APA. The premium shall be paid by the APA;

7.4.h Assisted by the National Office Manager, be responsible for preparing or supervising such tax and other official documents as may be required by law and proposing or supplying such other budget or financial reports as the Board of Directors may direct;

7.4.i Compile and present a budget to the incoming Board of Directors subsequent to the General Membership Annual Meeting; and

7.4.j Perform other duties as assigned by the Board of Directors.

7.5 General Counsel. The General Counsel shall:

7.5.a Advise the Board of Directors on all legal matters which may come before it and may represent the APA in all litigation;

7.5.b Provide legal advice to the Board of Directors;

7.5.c Maintain professional liability insurance at General Counsel's own expense for professional legal services provided to the APA in an amount determined by the Board of Directors; and

7.5.d Perform other duties as assigned by the President.

7.6 Editor In Chief. The Editor In Chief shall:

7.6.a Publish or cause to be published any and all publications, newsletters, journals or other documents authorized and directed by the Board of Directors;

7.6.b Distribute or cause to be distributed any and all publications, newsletters, journals or other documents authorized and directed by the Board of Directors;

7.6.c Recommend to the President, for approval and appointment, the names of other editorial and/or staff members. The Editor In Chief shall maintain financial and other records regarding publications as may be requires by the Board of Directors: and

7.6.d Perform other duties as assigned by the President.

7.7 National Office Manager. The National Office Manager shall:

7.7.a Act as Secretary for the APA and be responsible for recording and retaining the current APA Bylaws, the official minutes, resolutions, and proceedings of the APA;

7.7.b Distribute official notices, correspondence and other materials and record policy and procedures established during meetings of the Board of Directors; and

7.7.c Manage the APA's national office in support of Members under the direct supervision of the President and the Board of Directors;

7.7.d Be the primary custodian of all records, of whatever nature; and

7.7.e Perform other duties as assigned by the President and/or Board of Directors.

Article VIII. Standing Committees and Ad Hoc Committees

8.1 Standing Committees. The following are the APA Standing Committees and the President shall appoint a Chairperson from the Board of Directors for each such Standing Committee:

1) Communications and Public Relations Committee
2) Ethics and Grievance Committee
3) Member Services Committee
4) Professional Development Committee
5) Research and Development Committee
6) Education Accreditation Committee
7) Standards and Specialized Testing Committee
8) Post Conviction Sex Offender Testing Committee

8.1.a Standing Committees shall consist of a Chairperson and no fewer that three (3) eligible members appointed by the Committee Chairperson, whose total number shall be determined by the Committee chairperson. The Committee Chairperson may appoint a Vice5 chair. The Committee Chairperson shall report to the Board of Directors; and

8.1.b Standing Committees shall have and maintain standard operating procedures, which may not be changed without a majority vote of the Board of Directors at which a quorum is present.

8.2 Ad Hoc Committees. The President may establish Ad Hoc Committees for the purpose of administering the goals and objectives of the APA. The President shall appoint the Committee Chairperson. The Committee Chairperson shall be either a member of the Board of Directors or a voting Member. Ad Hoc Committees shall terminate upon the: (a) completion of their stated purpose; (b) dissolution by the President; or (c) expiration of the office of the appointing President.

8.3 Policies and Procedures established by the Board of Directors in administrating the APA shall be documented as historical record by the Secretary and retained at the APA's national headquarters.

Article IX. Fiscal Year

9.1 Fiscal Year. The fiscal year of the APA shall be determined from time to time by the Board of Directors.

Article X. Amendment

10.1 Amendment. The Bylaws may be amended only by at least a two-thirds (2/3) vote of the voting members of the Board of Directors; provided, no amendment or other revision shall be voted upon unless a copy of the proposed amendment or revision has been mailed or otherwise provided to all members of the Board of Directors at least thirty (30) days prior to the meeting upon which the amendment is to be voted.

Article XI. Parliamentary Authority

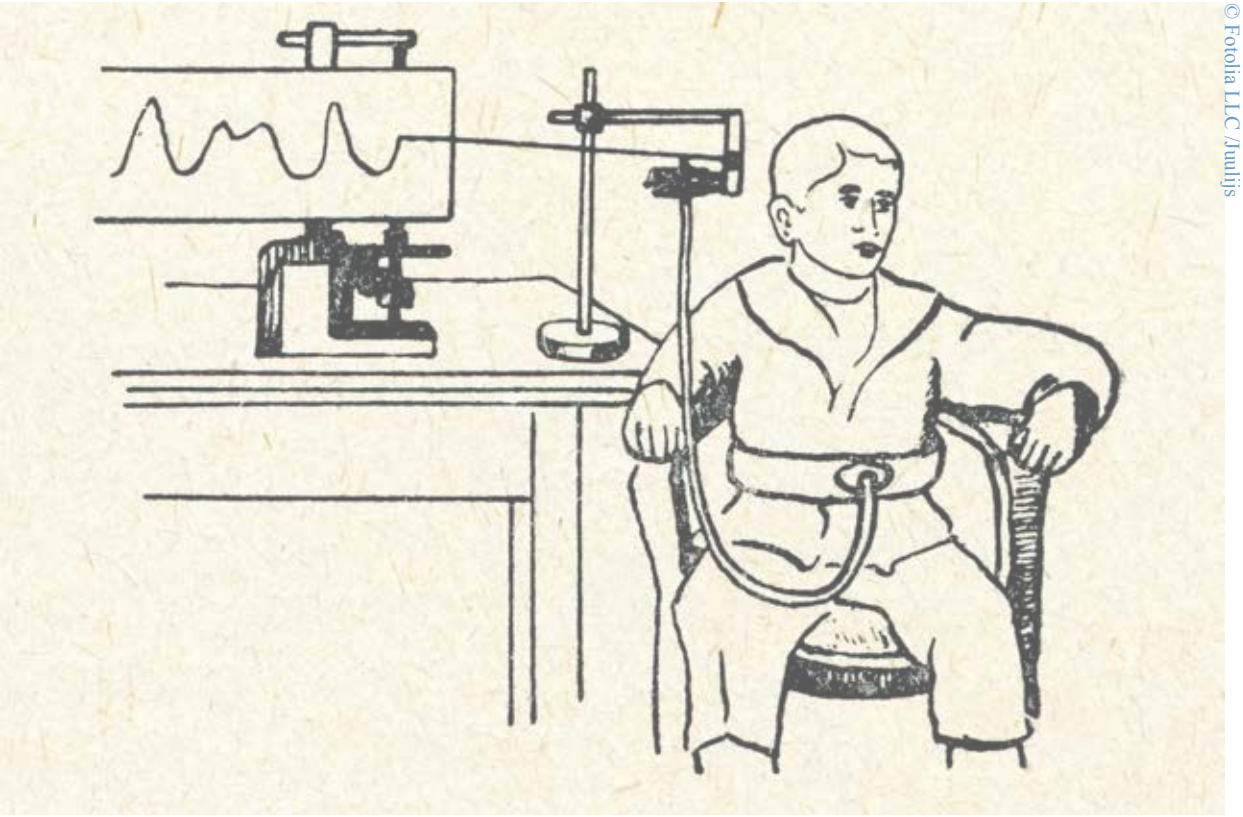
11.1 Parliamentary Authority. In all instances, the parliamentary authority for the APA shall be Robert's Rules of Order, latest edition, as amended. All meetings of the Board of Directors and the General Membership shall be conducted in accordance with Robert's Rules of Order, latest edition, as amended.

Article XII. Ratification

12.1 These Bylaws shall take effect as of the Effective Date set forth above and shall supersede all other Bylaws then in effect.

Historical Note

By Donald Krapohl[1]



The following is a passage taken from the 1907 book On the Witness Stand by Dr. Hugo Münsterberg, professor of psychology at Harvard University and mentor of Dr. William Marston. With his book Dr. Münsterberg offered one of the first contributions from the then-new field of psychology to law enforcement and forensics. Among his many suggestions Dr. Münsterberg makes the first intimations of recording multiple channels of physiology on suspects in a criminal investigation: respiration, pulse, vasomotor, and electrodermal. Given his stature in the field, his text likely influenced later workers who laid the foundation of polygraphy, such as Benussi and Burtt on breathing, certainly Marston and Larson on blood pressure and pulse, and possibly Father Summer's use of electrodermal recording in the 1930s. Interestingly, Münsterberg's book was also apparently read by the authors of

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I Mr. Krapohl is Past President of the American Polygraph Association, and coauthor of the forthcoming polygraph textbook by Elsevier Publishing, *Fundamentals of Polygraph Practice*, due in the fall of 2015. The views expressed in this article are solely those of the author, and do not necessarily represent those of the Department of Defense or US Government. Comments can be directed to apakrapohld@gmail.com.

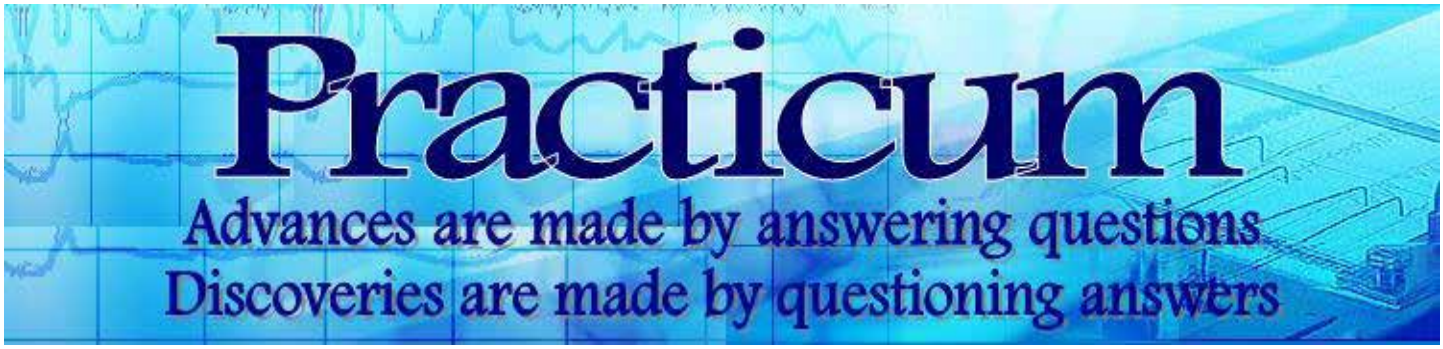
a 1910 collection of fictional detective stories called The Achievements of Luther Trant. In one story the hero, who was both a detective and psychologist, used a device with a pneumograph and plethysmograph and a procedure something like the Concealed Information Test with which he discovered a murderer. This was a full decade before Larson, Lee and Keeler conducted the first field experiments with the polygraph at the Berkley Police Department. While much credit goes to them for developing the instrumentation and processes of polygraphy, it was Dr. Münsterberg who initially proposed the ideas.

Our inspirations and expirations can be registered in finest detail and a variety of elegant methods are available. Perhaps the simplest "pneumograph" consists of a tube made of spiral wire and covered with rubber, to be attached by ribbons to the chest. Every respiratory movement lengthens and shortens the tube, and this presses a part of the air contained into a little capsule, the cover of which follows the changing pressure of the air and moves a registering lever, usually a large straw which enlarges the movements of the cover. The end of the straw but touches the smoked surface of a slowly revolving drum; it thus writes in the thin layer of smoke a wave line which shows the subtlest features of the breathing. It is a simple task to measure every element of such a curve, every change in the length, in the height, in the angle, in the regularity of the wave; and that means every change in the rapidity, rhythm, distribution, pauses and strength of the breathing. As soon as such delicate methods of registration are applied, the intimate relation between feeling and breath becomes evident. Pleasure, for instance, makes the respiration weaker and quicker; displeasure, stronger and slower; excitement makes it stronger and quicker; acquiescence, weaker and slower. But such generalisations cannot do any justice to the manifoldness of changes that may occur: every ripple on the interests of the mind reflects itself in the changes of the pneumographic wave — it may be an agreeable or disagreeable smell or taste, it may be exciting or depressing news from without or a fancy from within.

The same holds true for the heart beat, measured by the blood wave in the arteries; such a pulse writer is called a sphygmograph. It may be attached, for instance, to the wrist; a delicate lever presses against the wall of the blood vessel just where the finger of the physician would feel the pulse. The lever is attached again to the thin rubber which covers an air chamber, and the changing pressure

of air is again transmitted to a long straw which writes an enlarged record of the movement on the revolving drum, rotating regularly by means of clockwork. Here again the height and length and form of every pulse beat may have its own physiognomy. When we write pulse and breathing together on the same drum, we see at once that even every ordinary inspiration changes the pulse; while we inhale we have a pulse different from the pulse while we exhale. Far more influential are the feelings. Again it is only an insufficient abstraction if we generalise and say: pleasure heightens and retards the pulse, displeasure weakens and accelerates it, or excitement makes the pulse stronger and quicker, acquiescence weaker and slower. But there is still another way open to observe the changes in our blood vessels. We may examine the quantity of blood, for instance, which streams to a limb, by means of the so-called plethysmograph. The arm is held by a large tube filled with water; a rubber ring closes the tube. The change of blood supply which makes the arm swell changes the pressure which the water exerts against the air, which is again conducted through a rubber tube to a recording lever; every emotional excitement speaks in the blood supply of every limb. All these instruments of registration have belonged for decades to the household equipment of every physiological laboratory; it was therefore a sad spectacle when recently scores of American papers told their readers that I had invented the sphygmograph and automatograph and plethysmograph this summer — they might just as well have added that I invented the telegraph last spring. To recent years belongs only the application of these instruments for the study of feelings and emotions.

But we may go still further and point to expressions of emotions which are entirely beyond human senses. If we put our hands on two copper plates and make the weak galvanic current of a battery run through the plates and our body, we can, with the help of a delicate galvanometer, measure the slightest variations of the resistance to the current. Experiment shows that such changes occur, indeed, if our brain is excited; any emotional disturbance influences the resistance: it seems that the activity of the sweat-glands in the skin is under the nervous influence of our feelings, and the functioning of these glands alters the electrical conditions. A word we hear may excite us and at once the needle of the galvanometer becomes restless: there is no more uncanny betrayal of our inmost mind.



Relevant Question Formulation

Knowledge is knowing a tomato is a fruit; wisdom is not putting it in a fruit salad…
Miles Kington

By Tuvya T. Amsel

The examinee worked as a handy man in a metal junkyard from where tons of steel were systematically stolen. He was tall, stocky, rough and an ex-convict who allegedly "retired" from his past criminal career. The examiner, following the question formulation guidelines he was taught, phrased the relevant questions: "Have you taken any steel from here without permission?" and "Have you participated in anyway in taking this missing steel?" thus avoiding legalistic, accusatory or emotional words, such as "stealing". The examinee, hardly responding to the relevant as well as the comparison questions, scored inconclusive in his charts. When overviewing the case with the designated reexamination examiner, the question phrasing was blamed as a possible reason for the results.

Relevant question formulation

One of the basic Federal Examiners (2006) guidelines of phrasing relevant questions is: "…Relevant questions should: ... Avoid legal terms when possible… Not be worded in the form of an accusation or contain an inference that presupposes knowledge or guilt."[1] Following this line, Matte (1996) gives some examples: "For instance, in rape cases the term "sexual intercourse against your will" should be used rather than "rape." In homicide cases, words representing the actual act should be used rather than terms such as murder. Example, "Did you yourself shoot your wife?" rather than "Did you murder your wife?" "Did you shoot John Doe?" rather than "Did you kill John Doe?" In this manner, the forensic psycohphisiologist

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brings the guilty subject back to the scene of the crime. Second, the guilty subject will not be given an opportunity to rationalize his/her act"[2]. The ratio behind this guideline is explained by Abrams (1977) as: "Emotion laden words like murder and rape should be replaced with kill and force sex on to reduce the likelihood of a reaction to the word rather than a deceptive response"[3]

Same word different meaning

Some words have a different "clinical" dictionary type (denotative) meaning than common meaning. For one who owns a cat the word "cat" means love and affection while for another who is allergic to cats, s/he may start to sneeze and scratch instantly upon hearing the word. An additional factor affecting connotation is the person's language style. Language style is defined as the choice of words used by a specific group of people when they speak, from academic style used in papers, legal style used by judges and lawyers, and even to "Pentagonese" (military jargon typical of the Pentagon or the U.S. defense establishment, characterized by use of acronyms, neologisms and the use of nouns as verbs and adjectives)[4].

Amongst the different language styles is the criminal jargon style (slang). It was already recognized in the 19th century by Dr. Cesare Lombroso who is recognized as the "father of modern criminology" in his famous book "L'uomo delinquente" ("the Delinquent Man"):

> "One unusual characteristic of recidivist criminals when they form organizations in big cities, is the use of an almost private language. Its general sounds, grammar, syntax, and idiom remain standard, but its lexicon differs completely… Like savages, criminals create many words by onomatopoeia. The strangest aspect of criminal jargon is it's retention of archaic words that have been completely lost from living speech. Another intriguing characteristic of criminal jargon is [that in spite the fact that every region has its local dialect and jargon] thieves from different regions use the same jargon"[5] … "The necessity of eluding police investigations is the reason usually given for the origin of this slang. No doubt it was one of the chief causes, but does not explain the continued use of a jargon which is too well known now to serve this purpose; moreover, it is employed in poems, the object of which is to invite public attention, not to avoid it, and by criminals in their homes where there is no need for secrecy."[6].

Practical Aspects and implementations

There is no doubt that some general relevant question formulation guidelines should be followed.

When examining non-criminals a different approach should be considered than when examining criminals - especially hard core gang members. Although probably most criminal examinees understand the exact meaning of the words used by the examiners their connotation might bear a different meaning, resulting in a different emotional impact to the point of eliciting decreased or increased or non-psychophysical responses,

leading to an inconclusive chart or worse. In the pre-test, examiner should be very attentive to the spoken language and especially to the jargon used by the criminal examinee. The expressions that were used by the examinee should be repeated into the relevant as well as the comparison questions in order to avoid lessened or excessive responses.

Epilogue

The junkyard handy-man was back for the re-test. In the pretest, to the examiner question if "taking something without permission" and "stealing" are the same came the immediate answer "Defiantly Not" followed by a "Penal Code 101" lecture: "According to section 383a of the 1977 Penal Law, theft is defined when a person commits the following " … takes and carries away a thing capable of being stolen, without the owner's consent, fraudulently and without the claim of a right in good faith, intending when he takes it to deprive its owner of it permanently …"[7]. So as long as the person has no intention to deprive it permanently it is not considered a theft, though it is defiantly taking something without permission", come the scholarly answer. No doubt that this examinee spoke criminal (justice) language ….

Following this explanation the relevant question was changed to: "Have you stolen this missing steel from the junk yard?" a question that has produced deceptive reactions, though not as meaningful as: "Have you participated in anyway in the stealing of this missing steel?" The confession that followed explained the initial test inconclusive results "… I never took or stole steel, I was simply the last one to leave the yard and the first one to come in so all I did was to leave the gate open and in return I have received a regular supply of narcotics".

It should be noted that the inconclusive initial test results might be contributed to the soft language used by i.e. "taking" instead of "stealing" and/or to Matte (1996) assumption: "The forensic psycohphisiologist should also ask himself/ herself if the relevant question tends to be too weak, risking a lack of reaction to it because of "anticlimax dampening" by one or more stronger relevant questions he/ she is using in the test"[8]. Regardless of the initial results origin, examiners should use the examinee lingo during the session.

1 Federal Psychophysiological detection of Deception Examiner Handbook, Counterintelligence Field activity Technical Manual, (2006), 14.

2 Matte, J.A., (1996), Forensic Psychophysiology Using The Polygraph, J.A.M Publications, Williamsville, NY, 246 – 247

3 Abrams, S., (1977), A Polygraph Handbook for Attorneys, Lexington Books, Lexington, MA, 74.

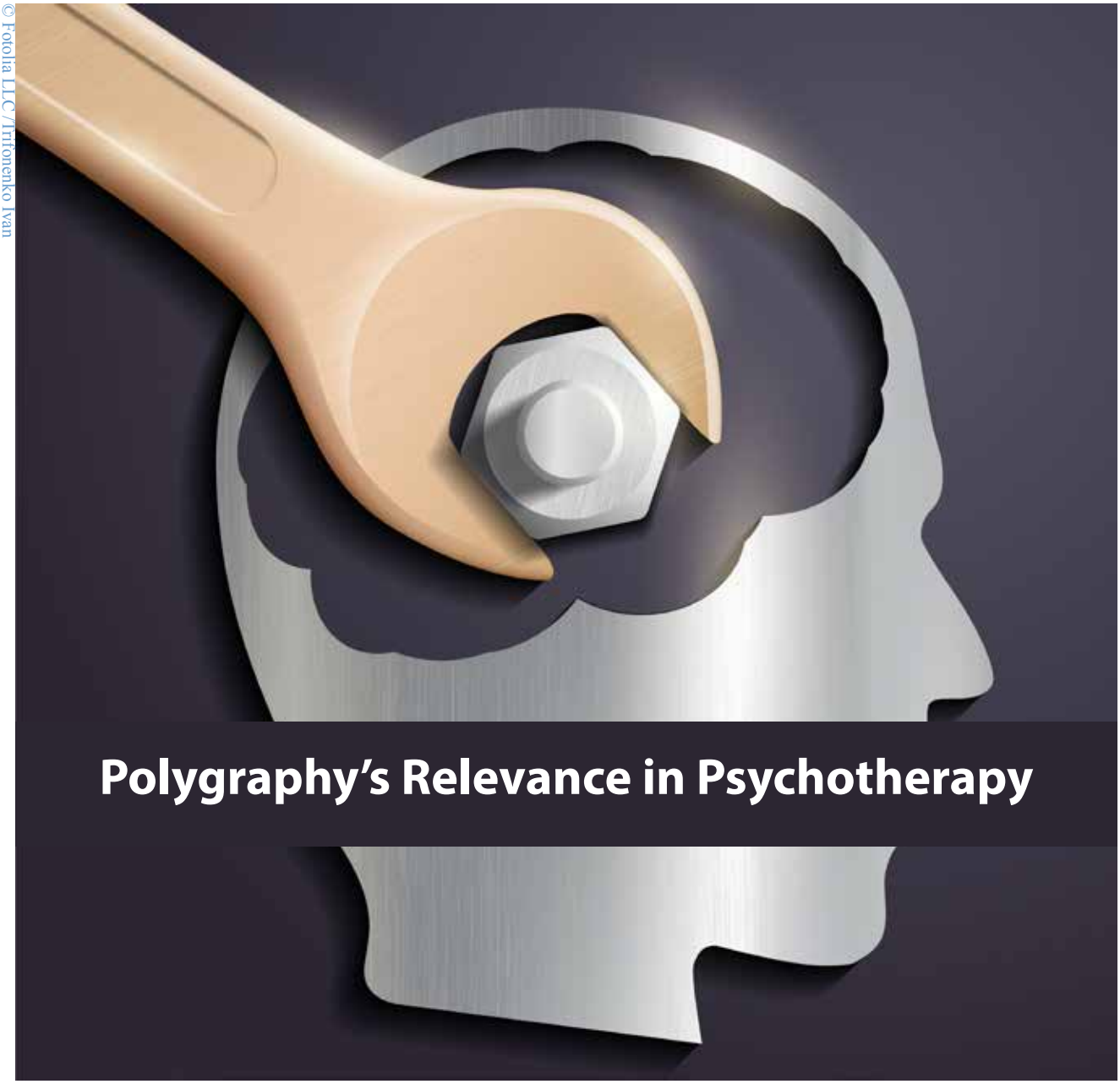
4 http://www.thefreedictionary.com/ Language+Style

5 Gibson, M., Hahn Rafter, N., (Translators), (2006), "Criminal Man - Cesare Lombroso", Duke University Press, 77.

6 Lombroso Ferrero, G., (2009), "Criminal Man- According to the Classification of Cesare Lombroso", The Project Gutenberg EBook of Criminal Man. 42-43

7 Israeli Penal Law 5737 -1977, Section 383a, Nevo Edition, 117, in http://www.oecd.org/investment/ anti-bribery/anti-briberyconvention/43289694.pdf

8 Ibid, Matte, 247.



Polygraphy's Relevance in Psychotherapy

By Jared Rockwood, LCSW
Clinical Director of Birdseye RTC

I will start out with a confession. I am not a polygrapher… but the polygraph has changed the way I think about therapy and the way I choose to engage the work I do with clients. I would like to take an opportunity to share a few experiences that were shaped by polygraph. The first story led to my original reluctance to trust the process. The second experience helped me to see the power of honesty and the importance of fostering disclosure. The final experience provided insight as to how to integrate research that indicates denial does not equate recidivism, while not ignoring overt attempts at deception . Psychophysiological detection of

deception (PDD) remains relevant to the therapeutic industry despite recent resistance; honesty really is healing, and polygraph aids this process because it works.

The first job I landed out of school was working with a small outpatient clinic that was run by one of my professors, Dr. Rob Butters LCSW. My interest in the job had little to do with the clinic itself and a lot to do with seeking out Rob for supervision. I felt if I was going to become a competent therapist my best chance was under his erudite tutelage. The population we worked with was fairly specific. We worked predominantly with youth that polarized into two separate groups: young victims of sexual violence, and adolescent boys that had sexually offended. Rob trained me to specialize with the youth offenders and launched me into a very specialized career path.

One of my first experiences with polygraph transpired during this first year of working with this population. I was working with a young man that we will call Al Moste. Al was 14y/o, hyper active, defiant, and referred for sexually touching a cousin. He was on probation and referred for sex specific treatment after pleading no-contest to his charges. Al completed a polygraph which he passed stating that he had not sexually touched his little cousin. The parents were highly supportive of the idea that he had been wrongfully accused and that the lawyer had set him up, and they were the victims of an unjust process, and that Al would never do anything like this.

The polygraph indicating that he had not engaged in the crime, which created a substantial hurdle to helping the boy settle into the process of treatment. He was condescending towards the other boys and would make subtle gestures indicating his disgust with them and his necessity of attending group. Because he had pled no-contest (which is akin to accepting the consequence but not admitting guilt) he was legally mandated to complete treatment. One day in group we were doing some work on relapse prevention and walking through an event for each boy where they had offended and we were identifying a variety of intervention options at various steps in the build up to offending.

Each boy had worked through their individual story and we had wrapped some strategies around the behavior. Last in the rotation was Al who launched into his

typical self-defensive stance. Side stepping his protest I asked him to tell us "hypothetically" what would have happened if it had taken place. Al Moste got real quiet and serious and gave a very specific description of how he would go lock the door, then use videogames as a way of trying to gain compliance (I'll let you play _____ if you _____). The air seemed to be sucked out of the room as he told the story. When he was done there was silence and a collective understanding that this was not as "hypothetical" as we had expected.

Having had little experience with polygraph prior to this experience the end result of this exchange was that I developed an inherent distrust of the PDD. The problem with extracting such a strong conclusion from a singular event is that statistically perfection does not exist. Donald J. Krapohl did a great job illustrating this through the idea of two overlapping bell curves. There is an intersection where false positive and negative will inevitably take place . Tuvya T. Amsel adds to this dialogue by pointing out that although psychology and other professions deride the inaccuracy of the polygraph, the assessment tools utilized in their own fields struggle to compete with the reliability and validity presented by polygraph .

After ten years of working in the field and seeing countless polygraphs transpire since that time I have come to appreciate and rely on them as part of the therapeutic process. Sometimes I grimace at the Sexual Behavior Risk Assessments (SBRA) I completed in my early career confident I had a fairly accurate snapshot of what was going on with a boy as we made placement decisions. After having worked in a residential system that includes polygraph as part of the inclusion criteria at placement I have witnessed close to 100 clients tested, and Al Moste is not representative of my experience.

More frequently I have watched as boys struggle through the disclosure process. Many, in fact most, are able to validate their sexual history timeline during their initial PDD. Countless times just prior to going into polygraph the boys will come into my office with their heads hanging low. They then state something like, "I just remembered something" or (my favorite and surprisingly common) "I had a dream and remembered…"

Let me illustrate another point with a story. The moral is that honesty is cleansing.

It is an important part of the healing process. I had a young man in my program who we will call Garzie Verdad who was 15y/o and had sexually offended on a pair of 6y/o twins he was babysitting. The boy came from a fairly affluent family and in addition to the legal ramifications of his actions his parents were pulled into a multimillion dollar civil suit where they were found guilty of negligence for allowing this boy to babysit the twins. The boy had no previous known sexual issues and had a variety of attachment and trauma issues from infant neglect and abuse in the foster system prior to being adopted at 6y/o.

Because of the high cost (pun intended) of the civil litigation the lawyer and family were adverse to him participating in an exam of psychophysiological detection of deception and banned him from doing so. He was told not to talk about sexual behaviors or thoughts that went beyond anything that dealt with the twins. Our treatment program averages about 9-12 months for most boys to complete treatment. Garzie was a raging terror in the milieu. He was frequently the discussion of staff discontent and more than one staff that left the program cited their inability to deal with this boy as part of the reason for their decision. He was mean, rude, defiant, and cared little about consequences or rewards that were put before him. After being in the program for almost 20 months he ran away with two other boys, broke into a local church, engaged in sexually acting out behaviors with the boys that included "playing bondage" where he held a boy down while another boy took advantage of him. He was picked up by the police 24hrs after having run from the facility. He came back a broken man. He was contrite, embarrassed, and repentant. In defiance of all the instruction that he had received from his lawyer and parents, and unsolicited from me, he began to lay out the full extent of his sexual problems. This triggered the necessary mandatory reports, scared his parents to death, upset the lawyer… and became the pathway to his healing.

Once the information was on the table he went to the PDD and verified his disclosure. After almost two years of treading water and minimal progress in treatment Garzie Verdad launched into an entirely new role in the group home. He was highly compliant, respectful, and motivated. He became a leader among his peers and provided a positive environment for others to experience healing. In short, honesty had set him free.

Let me conclude with one last experience with a young man that was 17y/o, highly intelligent (132 IQ), and steeped in denial. This young man whom we will call Dee Nileh came from a family system where his parents had divorced when he was 4y/o and both parents had remarried and had additional children within the new marriages. It was discovered that Dee had sexually touched his paternal half-sister which instigated his placement in sex specific treatment. The father was so livid with the boy that he had cut off all communications and forbidden any contact in the future.

Dee was easy to talk to and seemed to be motivated in the treatment process. His mother was highly involved and participated in biweekly family sessions. Upon completion of Dee's sexual history timeline he was invited to complete the customary PDD; which he failed outright. It is not atypical in these situations that boys will defend their innocence, question the accuracy of the machine, and vilify the polygrapher; and Dee Nileh engaged all of these defense mechanisms vehemently. After six weeks of a stand still it was determined to attempt another PDD. This was in part because I had bought into the boy's sincerity and began to question my own judgement in the matter. Once again the findings were deception indicated.

After another six weeks or so we were at a standstill in treatment. I was fully aware of the research that indicates denial does not necessarily predict recidivism . Thus holding a boy in treatment indefinitely because he failed to be honest felt like it would be unethical. In this situation the boy had been disowned by his father. It appeared he had likely offended on his maternal half-sister. The potential cost of full disclosure in his mind could be total abandonment by family. So the motivation for deception would be high. After consulting with the treatment team and family the following strategy was adopted. Dee Nileh was invited to compete a final PDD, which he failed, and yet he was begin to work on the next steps in his therapeutic journey which included the development of a relapse prevention plan. As he completed the various stages of treatment he was expected to create safety plans and risk management strategies that included the maternal half-sister. Yet, to respect his autonomy and statements of innocents at face value he was allowed to include the following disclosure to each of the formal assignments: "I say that I did not sexually touch (maternal half-sister), but my body says that I did."

This simple statement allowed Dee to continue to work on his assignments, utilizing the information obtained from the PDD in a functional manner, while acknowledging the denial in a respectful balance with the facts facing the situation. He says he did not do it. The polygraph is not a measurement of lie vs honesty, but the psychophysiological stress involved in deception. With this standard in place Dee Nileh was able to focus and progress in the therapeutic system. He eventually completed the program, moved onto college, and it has been more than half decade since his completion of the program and he has remained a safe and productive member of society.

In our local jurisdiction the denial research and frustration with lack of research surrounding PDD with adolescents has led to mass opposition and a systematic reduction in the formalized use of polygraph with this specific population. There is a clear value added to having PDD as a piece of the assessment and treatment puzzle. We can respect recidivism studies surrounding denial without compromising the powerful healing agent of honesty, which PDD fosters. In addition many of the techniques that are used in psychology fall short of being empirically supported, and yet the lack of research does not equate ineffective or inappropriate intervention.

The core concept that is important to communicate here is that PDD provides the foundation for honesty and healing in people dealing with some fairly intense internal daemons. I recognize that what I am putting forth is anecdotal and it would be preferable to have a large sample size and formalized measures to substantiate the claims I have suggested. Yet, it is important to stand up and be proud of the power of PDD to create safety in society and support the work of many professionals that are striving to make a difference in the world. PDD is a powerful tool that should be proud of the heritage and roots that have been planted. Polygraph will only grow more legitimate as research scrutinizes our processes and the industry improves the science.

Polygraph Questions and Questionable Questions

By Raymond Nelson[I]

Ending a sentence with a preposition is the sort of nonsense up with which I will not put.

– attributed to Winston Churchill

Good polygraph questions should be easy to formulate, easy to understand, and easy to interpret. The practical meaning of the test result should be easily understood regardless of whether it is positive or negative. A good polygraph

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question is likely to include some version "did you do it," in which the "do it" part should be some action verb that describes the examinee´s possible involvement in the behavioral concern. The following is a list of commonly held requirements for relevant questions:

- Describe the examinee´s involvement in the behavioral issue under investigation
- Easily answered YES or NO (though no published studies have involved YES answered relevant questions).
- Avoids the use of legal or clinical jargon that is not easily understood by people without specialized training.
- Avoids prior assumption of guilt.
- Simple, direct and easily understood by the examinee.
- Time delimited (date or date range of allegation, or time period for screening).
- Free of references to mental state, memory or motivation. An exception may exist when these are the subject of an examination following an admission of the behavior under investigation.
- Balanced with other questions in terms of length and complexity.

One of the more questionable practices in the formulation of relevant questions is the choice not to describe the behavioral incident or allegation under investigation. For example:

R5 Is any part of Count 1 the truth?

R8 Concerning Count 1 of the Criminal Complaint, is any part of it the truth?

R11 Is any part of the Criminal Complaint filed against you the truth?

These relevant questions are questionable for a number of reasons. The first question is approximately one-half the length and number of syllables as the next

two questions. This alone may have the ability to evoke differences in response due to differences in novelty. The word "count" may cause problems as it may hold different meaning in different contexts. These polygraph questions are oriented around the construct of "truth," a complex and lengthy philosophical discussion. It may seem appealing to some to view the polygraph test as an optimistic form of truth-detection or truth verification. To do so, however, allows the concept of the truth to become a precarious matter of subjective belief. In short, our polygraph definition of truth is probably best if limited to rational epistemological definitions. Rational paradigms regarding truth are independent of belief and are premised on observable and replicable empirical facts.

The greatest deficiency in these relevant questions is they do not directly address the behavioral act(s) under investigation. Polygraph questions are inherently questionable as to whether examinee has correctly thought about the target issue if they neglect to clearly describe the behavioral issue under investigation. A related problem is that without supporting documentation a reader would not know these relevant questions were used in the context of an alleged sexual assault against a male child under age 12; specifically, engaging in oral sex acts with the 5 year-old. Polygraph questions are also questionable if they require the listener to refer to another document to understand their meaning.

Reasons may vary somewhat as to why examiners may sometimes neglect to clearly describe a behavioral issue. Some examiners may experience a sense of unfamiliarity orpersonal discomfort presenting questions about certain topics. Some may succumb to an impulse to engage in mind-reading or clairvoyance around the possibility that an examinee will respond too much to behaviorally descriptive questions. And finally, some may collude with the examinee in attempt to present questions in an easier or softer way that is intended to be less likely to result in a statistically significant response to the test stimuli. Use of these questions indicates either an attempt to manipulate the stimulus and response outcome or a fundamental misunderstanding of how the stimulus and response paradigm forms the basis of the polygraph test: present the stimulus, and measure or observe the response. Polygraph stimuli should describe the behavioral issue under investigation.

There is no great hazard if the examinee reacts significantly to these problematic questions, producing positive results indicative of deception. That examinee would

simply be subject to additional investigation and additional questioning. In the experience of this writer, most examinees who fail polygraph questions about alleged sexual contact with a child most often admit their guilt and are referred for therapy while living under supervision in the community. The example questions presented earlier were provided in the context of a polygraph referral from an attorney. However, it is not likely that police examiners would be satisfied with clearing a suspect with polygraph questions that do not describe the behavioral concern. Similarly, polygraph examiners whose work involves post-conviction supervision of convicted offenders are unlikely to be satisfied with the idea of exculpating or exonerating a person with polygraph questions that do not describe the behavioral allegation. In the same vein, it seems unlikely that government examiners, whose work involves the screening or investigation of matters involving operational or information security, would be amenable to the idea of clearing an alleged issue of concern using polygraph questions that do not describe the behavioral issue under investigation.

If there is such a thing as a best practice method for the formulation of polygraph questions, then it is likely that the same best practice will be satisfactory regardless of the context. In this example, behaviorally descriptive polygraph questions could prove satisfactory to any referring professional, whether attorney, police investigator, child protection worker, community supervision officer or mental health treatment provider. Given the limited information available about the case example, a more satisfactory set of questions might be the following:

R5 Did you ever engage in sexual contact with your step-son?

R8 Did you ever engage in oral sex acts with your step-son <name>?

R10 Did you ever engage in oral sex acts with your step-son at any time?

These questions are also not without some need for discussion. Although it might be preferable to limit the time of reference to the exact time period of the investigation, that information was not previously provided and so the time period was stated more broadly in these example questions. There is no psychological bright-line or reason why the articulation of a date or range of dates would increase or decrease potential response to a behaviorally descriptive stimulus. Use of "time-bars" with relevant questions is a matter of convention and convenience for polygraph field

examiners and referring professionals who seek to increase the signal value of the test stimuli. Expecting psychophysiological responses to conform neatly to verbal logic may be imposing excessive and unrealistic expectations on noisy psychological mechanisms.

Another point for discussion will be the use of the alleged victim´s name in the relevant question. Opinions are abundant on this matter, but it has not been subjected to any published systematic study or analysis. This may need to be the subject of a different discussion. In reality there may be as many different ways to formulate relevant questions as there are examiners and examinees. The important concern here is not whether any particular examiner would, or would not, formulate questions exactly the same way. The important issue is whether the test questions can be reasonably expected to work as intended based on the evidence that we have available and based on what we know about the psychological basis of observed physiological response. A straightforward approach to testing – devoid of mind-reading and clairvoyance – would hold that if the examinee is aware of the behavioral allegation at the time of the polygraph exam, then the examinee is also aware that it is not the examiner who has made the allegation. The role of the examiner is simply to present the test stimuli, parse the source of response, and quantify the margin of uncertainty associated with a categorical conclusion relative to our published knowledge about the normally expected responses from guilty or innocent persons. Good polygraph questions should provide clear interpretable meaning regarding the issue under investigation regardless of whether the test result is positive or negative. Behaviorally descriptive questions will help to achieve the goal of clear interpretable polygraph results. Use of questions that avoid describing the behavioral concern is questionable.

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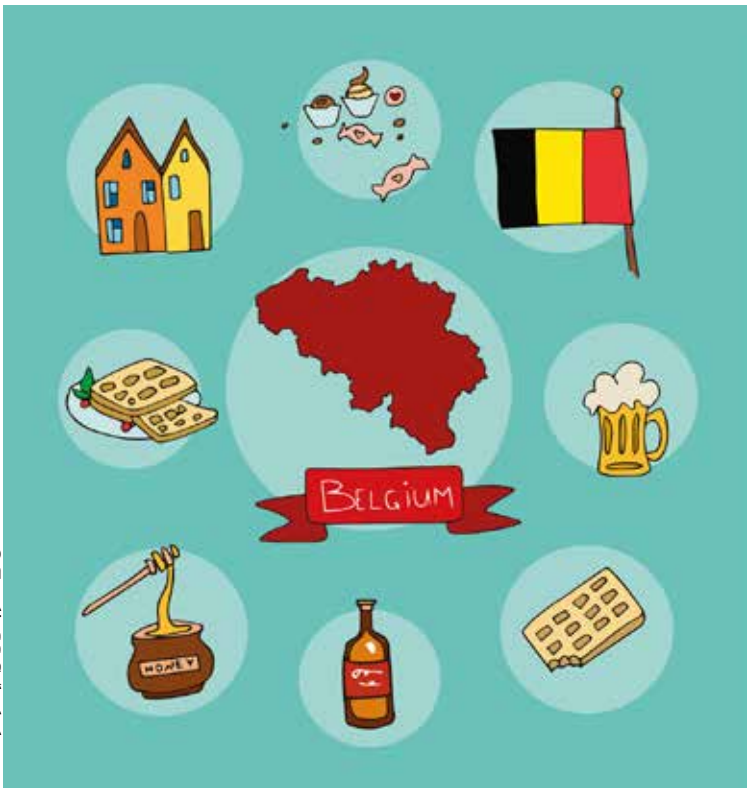
By Gregorio Cornelis

Belgium at the heart of Europe

Belgium at the heart of Europe with a population of 11,210,000 people on a surface area of 30,528 square kilometers makes it a small country. But the importance of its central geographical location between the most important countries in Western Europe makes it one of the richest and most densely populated areas in Europe.

Belgium is a constitutional monarchy. King Philippe, the current monarch, is the seventh King of the Belgians. As an independent country declared in 1830, Belgium is still quite young.
At that time, the various regions of Belgium already had a rich history in Europe-being at the crossroads between the Latin and Germanic worlds. Its multilingualism and pioneering political, social and religious freedoms have all contributed to give Belgium its cosmopolitan character and made it into the tolerant multicultural society it is today.

Belgium has three official languages: Dutch, French and German. It is a Federal State having three Regions and Communities. The Flemish Community has 6,255,000 habitants who speak Dutch. The French Community of 3,500,000 people in the Walloon region speak French. German Community speaking German by 75.000 persons. More than 1,300,000 people are in the third region of Brussels- the Capital.



Flanders boasts many cities and ports with a 68 km of North Sea coast in a flat landscape, while Wallonia is hillier especially in the south with the Ardennes, well known for forest walking rails and footpaths.

Belgium offers an incredibly wide range of breweries and different beers. Nowhere else in the world you can encounter so many local, authentic beers with such an enormous range of tastes and flavor's. Indeed, while there are only ten Trappist beers in the world, six of them are to be found in Belgium, being brewed by the monks in abbeys. Another specialty is chocolate, waffles and the Belgians fries.

Belgium hosts a huge number of music festivals such as Rock Werchter, Couleur Café, and Tomorrowland. There is something for everyone – and it's never very far away.

Belgium is home of the comic strip and has the world's highest concentration of writers of such strips and is also very creative in the music world with people like Adolphe Sax, the inventor of the instrument that bears his name, the saxophone.

Belgium has safeguarded the heritage of the wars of yesterday, in memorials, historical sites, cemeteries and re-enactments.

A few days ago we ended celebrating the bicentenary of the Battle of Waterloo, name of a town nearby Brussels where an army of Allied forces stopped the Napoleon's army.

We commemorate in cities as Ypres and Passchendaele the 100th anniversary of the First World War with the Battle of the river Yser where we could manage to halt the enemy. Belgian soil could again stop with Allied Armies, a dictator's regime.

With the Second World War, Belgium was again occupied in 1940 for another 4 years. Liberated late in 1944 by Allied forces including British, Canadian, American armies and with also hundreds of Belgian soldiers who had escaped to Britain, as had the Belgian Government living also in exile there.

After the experience of World War II, Belgium abandoned its neutral stance in international politics, in favor of military, political and economic integration and joined major international organizations.

Due to this history heritage we house more over 1,000 public and international organizations that have established their headquarters in Brussels, Belgium's capital city. Belgium is one of the founding members of the North Atlantic Treaty Organization (NATO) and hosting its headquarters in its capital, Brussels and NATO's operational headquarters, the Supreme Headquarters Allied Powers Europe (SHAPE) In Mons.

Brussels also hosts the main institutions of the European Union (EU), the European Commission and European Council employing thousands of European civil servants based in Brussels- which is therefore often called 'the capital of Europe'.

The presence of these international organizations means that Brussels has one of the largest communities of foreign diplomats and journalists in the world. The city also attracts many other professionals, among them members of think tanks, academics, experts and lecturers, as well as multinationals and international service companies.

Law enforcement in Belgium

In 2001, the Belgian police agencies underwent an in-depth structural reformation which resulted in the creation of a completely new police force. Law enforcement in Belgium is now conducted by an integrated police service structured on two levels (a Federal Police and a Local Police level)

with a total of 45,000 people. Both forces are autonomous and depend of different administrative, judicial authorities, but are linked in regard to reciprocal support. The Federal Police is basically charged with the execution of particular missions (including those overlapping more than one locality) of administrative and judicial police, as well as providing specialized support to the Local Police and the Federal Police investigative units itself.

The polygraph unit depends of the next chain of command: Behavior Science Unit, Directorate of the Technical and Scientific Police, General Directorate of Judicial Police, Federal Police. The polygraph unit provides specialized support, towards all, Local and Federal Police units.

History of the polygraph in Belgium

Through an investigation against a pedophile and serial killer of children in 1997 that shocked the country, our governmental leaders decided to apply new technologies to investigations. One of these techniques was the use of polygraph. We used the services of polygraph examiners from Canada and South-Africa and due to their success during these two years in some cases (almost 80 persons were tested) the tool was proved to be useful and it was decided to train our own police officers in that technique.

In 2001 we started with two polygraph examiners in Belgium. As being the first Western European pioneers on this field we implemented the technique in Judicial Criminal Investigations. We started informing our magistrates and police colleagues, explaining how they could use the technique, what being aware of, the limits of the technique, the scientific validity, etc… and this very open minded.

Training

Now in 2015 we are working full time with 6 polygraph examiners, all trained at the Canadian Police College. This training involved a 13 week course with a memorization text, 52 day academic phase with 3 weeks mock crime training plus two-week field internship training phase and an eight month certification phase which must be completed within one year. Up to now in total eight Belgian Police officers had been trained as polygraph examiners at CPC. One retired in 2014 and another one stopped after four years, and now works doing another police duties.

Association

All Belgian polygraph examiners are members of the Canadian Association of Police Polygraph CAPP and the American Polygraph Association APA. Since 2003 we are also assist as monitors during the Polygraph

Examiners Course in Ottawa.

Other countries interested?

Our polygraph unit is located in Brussels. In the past we also had magistrates and investigators from Luxemburg, France, Great-Britain, Germany, the Netherlands whom where interested to start up the use of polygraph in their countries.

Testing techniques

We all use the Utah single issue MZCT format as our most commonly used technique.

We are using the Probable Lie Technique. Since a few years and with approval of the teachers at the Canadian Police College and our Canadian Association CAPP, we also use sometimes AFMGQT with 3 relevant questions, and also very rarely the Directed Lie Technique.

Research

The only research done in Belgium and the Netherlands are papers and books written by Ewout Meijer and Bruno Verschuere. The first one is from the Netherlands and is assistant professor in the Psychology and Neuroscience Department of Maastricht University.
The second one is from the University of Gent Belgium but now lecturing as associate professor of forensic psychology at the Psychology Department University of Amsterdam. They have been very interested in what and how we are doing, and stayed during a time following our tests formats and work. When researching in depth the Directed Lie Technique formats they started to be very opposed to the Probable Lie Technique.

Our different peer-reviewed validity studies going from 90 up to 98% are knockdown by them to maximum 85%. They are very supportive of a knowledge-based approach known as the Concealed Information Test.

Instrumentation

We use Lafayette LX-4000 instruments.
Legal issues

The polygraph in Belgium is used as a special interrogation technique and in 2003 a Ministerial Circular concerning the use of the polygraph in criminal law procedure, included instructions and recommendations, such as the audio-visual recording of the whole interrogation, also making a written official report of the test that will mention the questions and answers of the actual test. Test subjects have to be voluntary, and giving the examinee his rights as being suspect in a criminal matter.

Polygraph is used as evidence in court and admissible as an element of proof. It is used, together with other elements, by the judge or juries to help make their own opinion about guilt or not. Just like in any other cases the judge can use or not use the results of the polygraph exams (in favor or against the culprit). The final judge states in his total independency the exact value of the polygraph exam result.

This has been confirmed by a judgment of our Supreme Court in 2006 affording polygraph results judicial notice of acceptance. They stated that the judge in total sovereignty can or not use the polygraph exam results in a judicial case.

The judge decides in total autonomy the value of a polygraph results given as evidence or not. Due to this sovereignty we don't have an exact and total overview which value a judge in a case give or not.

The polygraph examiners are on a regular base asked to testify in criminal cases about the obtained polygraph result and the demand comes from public attorney or the lawyers (mostly in major crime cases – murders). Supreme Court judgement stated also that neither the presumption of innocence nor the right to silence are violated.

Problems

Starting in 2001 with 2 polygraph examiners and due to the workload we are 14 years later with 6 examiners (trained 8).

If we would like to use the polygraph as in Canada, where a polygraph can be conducted within a few weeks of a request, we would need 20 polygraph examiners in Belgium. Our waiting list time is still a few months (though at one time it was seven months) and its use is only in criminal judicial investigations. Due to the financial crisis period we still are having in Europe we had a hard time proving the usefulness of the polygraph technique. We had to fight and struggle (even at a certain time against our own hierarchies) to obtain the minimum high standards which are required to do a professional work. Things are a little bit better now, but just like I tell each investigator coming in to test his suspect in a criminal case and just before obtaining the necessary polygraph charts… always expect the unexpected.

Also up to now we can barely fulfill our major judicial criminal crime cases. We can't stretch to test in the field of intelligence (anti-terrorist testing of ex-Syria fighters), pre-employment, PCSOT or any other worldwide already useful application.

So being one of the pioneers in Europe using the polygraph since 2001 and still doing it fulltime, there is a still a long way to go.

The author Gregorio Cornelis is a police officer with the Belgian Judicial Federal Police.

He started in 1983, with the uniformed patrol division for a few years, then worked as investigative detective during 15 years on major crimes cases. Since 2001 he has worked as a full time polygraph examiner, having started the program. He speaks Dutch, French, English and Spanish, and he is learning German. Greg is a CAPP member and full APA member since 2003.

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Alternative Locations For The Cardio Cuff

Is It Safe? Are The Data Similar?

By Mark Handler, Raymond Nelson & April Gougler-Floyd

One of the common waveforms collected and analyzed during Psychophysiological Detection of Deception (PDD), or polygraph, examinations is the cardiograph. It is collected using a partially inflated blood pressure cuff usually placed on the upper arm over the brachial artery and inflated to about 55-65 mmHg. Phasic changes in pulse wave amplitude and waveform baseline are related to changes in relative blood pressure (Handler, Geddes, & Reicherter, 2007). Of late, only the change in the waveform baseline is considered diagnostic in manual scoring. Waveform baseline can be evaluated manually using where the diastolic points' slope changes from negative to positive. Waveform baseline can also be evaluated using the systolic peak points, and laboratory studies have describe the use of the average of all systolic and diastolic peaks (Kircher, Kristjansson, Gardner, & Webb, 2012; Kircher & Raskin, 1988).

Typical cuff pressure partially occludes venous return distal to the cuff

location resulting in vasocongestion (Podlesney & Kircher, 1999). Test subjects sometimes report unpleasant feeling in those areas including tingling and loss of sensation (Yankee, 1965). Resultant skin color changes can alarm some test subjects. Researchers have tested alternative technologies such as the Finapres (Podlesney & Kircher, 1999) and alternative devices like a finger cuff (Dollins& Cestaro, 1997) in search of a replacement for the upper arm cuff. In order for any device to be considered an acceptable "drop-in" replacement there should be a strong correlation between the traditional and experimental waveforms.

The Finapres works on the theory of Peñáz principle where a force exerted by a body can be determined by measuring an opposing force that prevents physical distention or changes. The Finapres offered significant correlation with the traditionally measured cardiograph. For diastolic changes the regression coefficient mean was r= .84. For systolic changes, the mean was r= .74. The Finapres has been replaced by a device called the Portapres (Finapres Medical Systems, The Netherlands). Unfortunately, the price of the device (approximately $40,000 U.S.) is cost prohibitive (Gerin, Goyal, Mostofsky, & Shimbo, 2008).

The one study we found on the finger cuff (Dollins& Cestaro, 1997) suggests it is not a suitable drop-in replacement for the traditional arm cuff. These researchers suggested a minimum point-biserial correlation of .90 was needed in the waveforms to consider the finger cuff a drop-in replacement. They collected simultaneous cardiographs from the upper left arm and both thumbs. The investigators reported congruence of .9 or greater less than 75% of the time overall. Additionally, they reported having to make about 150% more centering corrections with the thumb cuff than the arm cuff. Their final recommendation was the finger cuff on the thumb not be used as a drop-in replacement for the arm cuff.

One alternative cuff location reported in the literature (Prado et al, 2015) is the lower leg or calf. The primary artery monitored here is the posterior tibial artery. Medical concerns about test subjects with deep venous thrombosis (DVT) warrant caution if selecting this location. DVT occurs when blood clots or thrombi form, usually in the large veins of the legs and many people with DVT are asymptomatic, and unaware of their condition. A very serious condition can occur if a blood clot should break loose, travel to the lungs, and block blood flow to a portion of the lungs. This is called a Pulmonary

Embolism and can be a serious health risk. The American Association of Critical Care Nurses (AACN) cautions that blood pressure cuffs should not be applied to extremities with DVTs. The concerns are that mechanical agitation for extended periods of time can increase the risk of an embolism (AACN, 2015). The Wound Ostomy and Continence Nurses Society WOCN) has also cautioned that applying compression with the blood pressure cuff may dislodge blood clots (WOCN, 2012).

Risk factors for DVT include; increased age, cancer treatment, smoking, taking birth control pills & other hormone therapy, diabetes, being sedentary for extended periods of time, obesity, heart disease, blood disease, injuries to veins, pregnancy or recent birth, and slow blood flow through veins. Many people with DVT are asymptomatic and thus unaware of their condition. This should be a concern to examiners seeking to collect cardiograph data from the leg and warrants a consideration of the benefits versus the risks. While cardiograph collected from the lower leg has been described by examiners as relatively stable, the potential health risk of an unknown DVT suggests alternative cuff placement.

Other medical conditions cause concern with maintaining prolonged pressure to a person's lower extremity. People with peripheral vascular disease, specifically peripheral arterial disease (PAD), already have narrowing in the lower extremity arteries. While PAD can occur in any artery it is much more common in the lower extremities, thus raising concern with putting the blood pressure cuff on the lower leg. Pretest screening for PAD is limited because many people are asymptomatic and unaware of the medical condition. People with diabetes can also have vascular disease and nerve damage. Prolonged pressure from a blood pressure cuff may result in pain, swelling, increased numbness, and changes in skin color.

Another suggested alternative location for cuff placement is the forearm. The AACN suggests the forearm as the second choice location for blood pressure measurement following the upper arm (AACN, 2015). When the blood pressure cuff is placed on the forearm it may be better tolerated by some test subjects, even at pressures of 80-90 mmHg. In order for this to be an acceptable alternative for polygraph we should have data showing a high degree of correlation with the traditional cuff. Unless the replacement is very similar in design and use, we expect to have differences in the two tracings. This can introduce unknown

variability into the polygraph scores. If the correlation (or covariance) is sufficiently high, we can expect the scores to differ by less than a normal rounding coefficient. In the case of manual scoring with integer points, the rounding coefficient will be ½ of one point. The impact of rounding will, of course, be slightly different whether using subtotal or grand total scores, due to the differences in variance. Initial simulations suggest that a correlation coefficient of .97 will sufficient to constrain differences in scores to within ½ point with both subtotal and grand total scores.

The practical meaning of this is that any sensor that can achieve a correlation coefficient of .97 or greater with the current cardio arm sensor can be expected to serve as a drop-in replacement. This is without the need for revalidation of the structural models or recalculation of normative data. For field examiners this will mean that drop-in sensors that achieve this correlation can be used without concern for adjustment of decision cutscores. We can expect the test precision and error rates to be within known and established alpha boundaries. One recent analysis using practice exams has suggested that the forearm cuff data may be capable of providing the required correlation coefficient to achieve a drop-in replacement of the traditional arm cuff. A more complete description of that analysis is forthcoming.

Caution is warranted whenever we are attempting to substitute proven technologies with improved replacements. As a general rule, new replacement technologies should offer more advantages and fewer disadvantages. The substituted part should have performance that equals or exceeds the technology being replaced. We recommend continued interested in the forearm cuff as a potential drop-in replacement for the traditional arm cuff.

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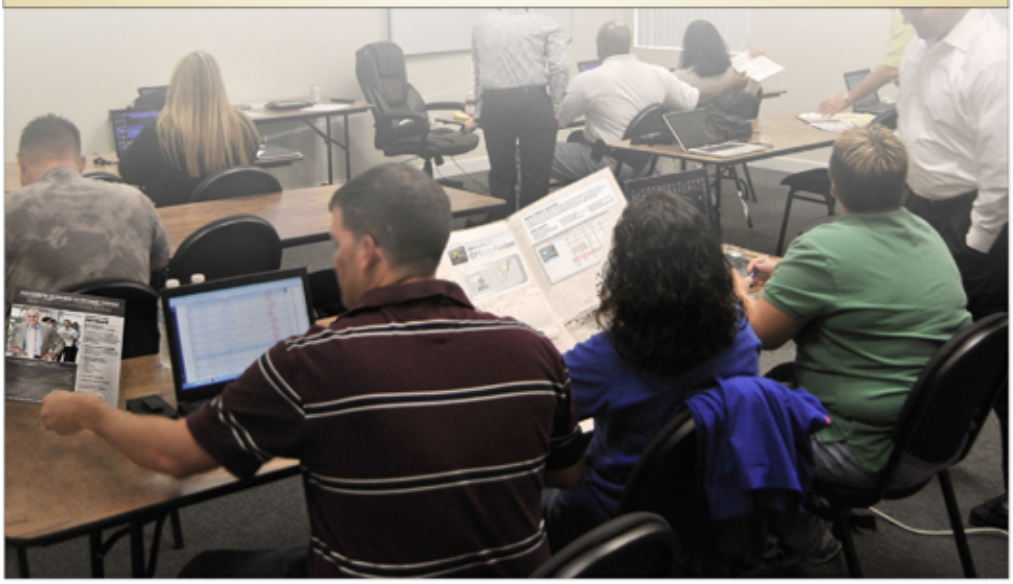

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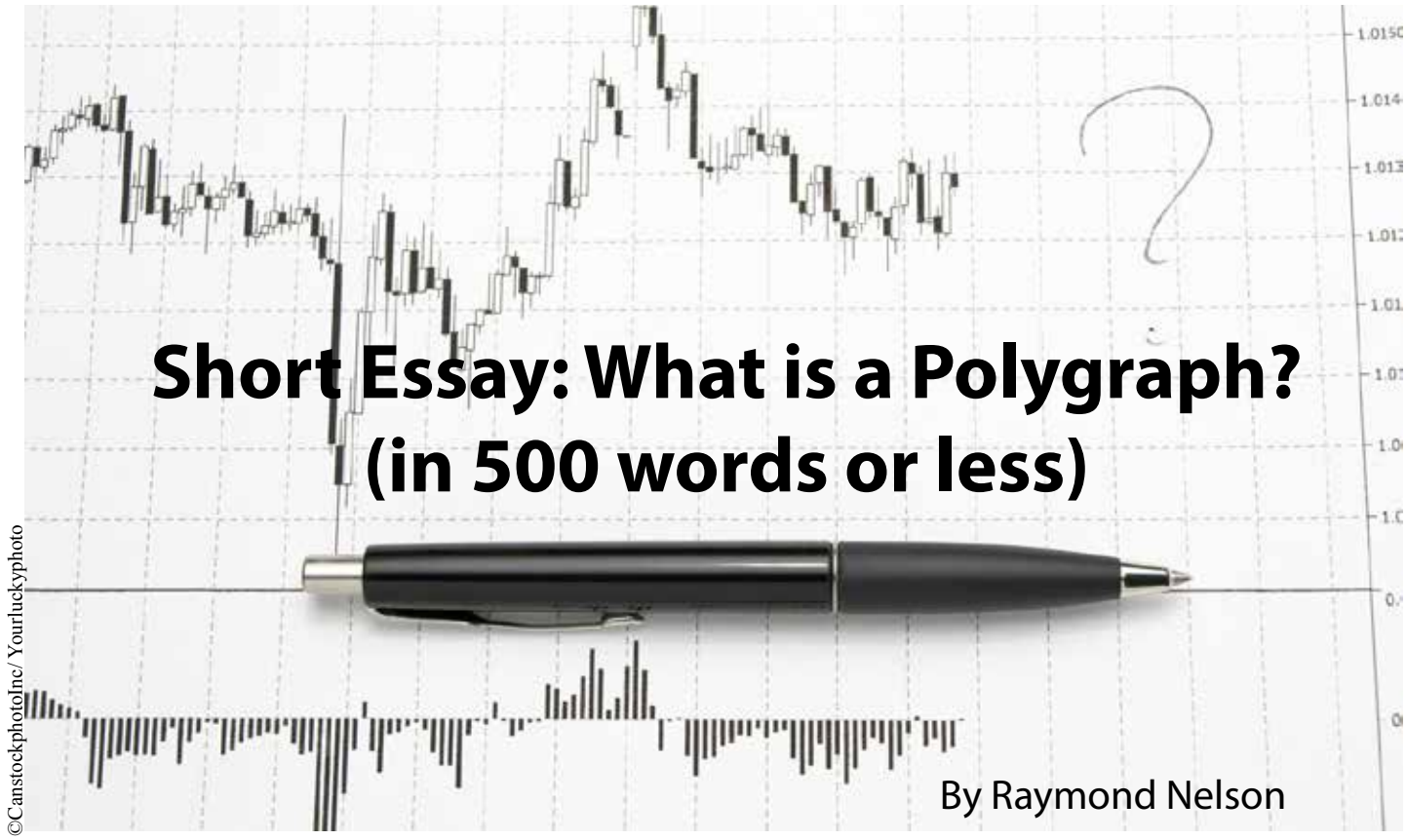


Short Essay: What is a Polygraph? (in 500 words or less)

By Raymond Nelson

Polygraph testing is sometimes referred to as lie-detection as a term of convenience. It is a standardized, evidence-based test of the margin of uncertainty or level of confidence surrounding a categorical conclusion of truth-telling or deception - or the possession of knowledge or information - regarding a test target issue. Test data are a combination of physiological proxies that have been shown to vary significantly with different types of test stimuli as a function of deception or truth telling in response to the relevant investigation target stimuli. The psychological basis of responses to polygraph stimuli is thought to involve attention, cognition, emotion, and behavioral conditioning.

The polygraph test must be completed in a standardized manner, in context in which the examinee can adequately concentrate on and attend to the test stimuli. Test data must be analyzed in a manner for which categorical and probabilistic conclusions are replicable - not mere conjecture or subjective opinion. The polygraph test can take upwards of 90 minutes to complete and consists minimally an interview phase to clarify the issue under investigation and related test questions, a data acquisition phase during which physiological responses to test stim-

uli are permanently recorded, and an analysis phase during which differences in responses to different types of test stimuli are numerically quantified to calculate a statistical classifier for deception or truth telling. The test can also include additional discussion to clarify or resolve any remaining inconsistencies.

Polygraph sensors record autonomic nervous system responses to test stimuli in addition to information about behavioral cooperation and the interaction of the examinee with the examiner. The polygraph test includes mechanisms and procedures to identify countermeasures intended to defeat or alter the test result.

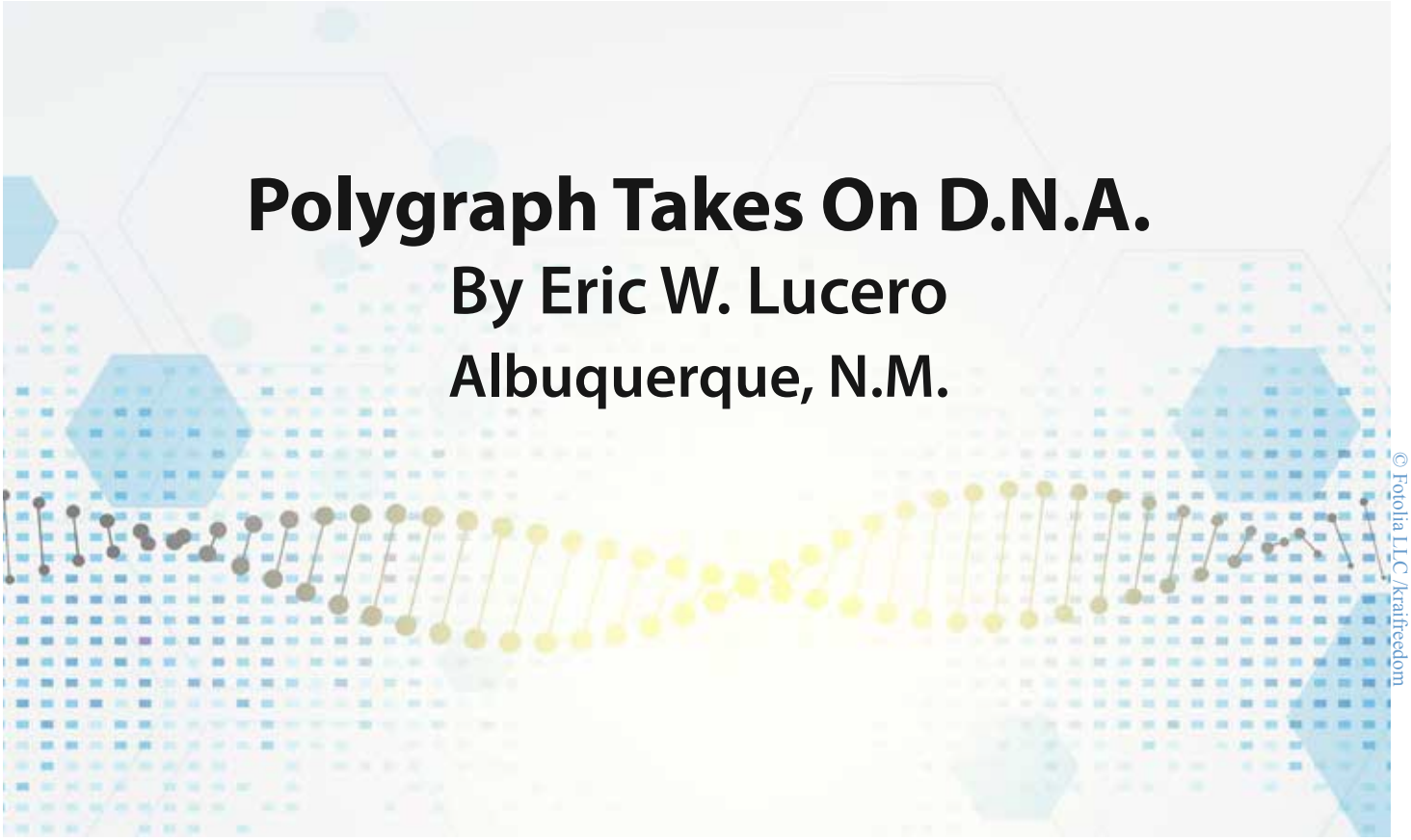
Suitability for polygraph testing requires that an individual is functioning within reasonably normal limits. Norm-referenced probabilistic computations may not apply to individuals who are functioning outside normal limits. Most persons who can work, drive, attend school, live and function independently are suitable for polygraph testing.

Mean accuracy rates of single-issue polygraphs range from the high .80s to low-mid .90s, with a lower limit of accuracy in the low to mid .80s. Multiple-issue screening tests are both statistically and psychologically more complex than single-issue tests, with mean accuracy in the mid .80s. Like other scientific test results, polygraph test results are a description of the margin of uncertainty or level of confidence associated with a categorical conclusion about a person's credibility regarding a target issue under investigation.

Polygraph Takes On D.N.A.

By Eric W. Lucero

Albuquerque, N.M.



On February 20, 2012, around 10:00 p.m., a masked man sexually assaulted an Albuquerque, N.M. woman in her garage. About a year later, on January 23, 2013, the case detective reported a "DNA Match" - confirmed through the New Mexico DNA Identification System Administrative Center (NMDIS) database. However, the Albuquerque Police Department crime lab cautioned this was only a partial match - simply "an investigative lead". The crime lab recommended further scientific testing. The crime lab scientist explained there was a NMDIS match of only a few loci (the location of genes on chromosomes). The number of loci in the sample was less than evidentiary standards and the national protocols surrounding the CODIS system that well-trained police detectives use. In other words, the case detective mistook an investigative lead for a full-blown, complete specific identification.

On January 24, 2013, the client was identified as an offender, arrested, and incarcerated in the Bernalillo County jail. At the time of his arrest, the client pointed out repeatedly that he was innocent and demanded a polygraph examination. Unfortunately his request went ignored.

On November 15, 2013, I tested the client using an event-specific, single-issue polygraph examination at his defense attorney's request. I used a three relevant question Utah Approach to the Zone Comparison Test format. I evaluated the test data with the Empirical Scoring System and the Utah scoring system test data analysis models. The test data were of sufficient quantity and quality for me to conduct a standardized numerical evaluation. My analysis of the charts yielded a grand total score of +9 with the ESS and +10 with the Utah scoring system. This is statistically significant for a truthful conclusion when the client answered the target questions.

So how did the polygraph evidence compare to the DNA?

I trusted my charts and stood by the client. In his fourteen months of incarceration, his criminal defense lawyer pointed out waves of exculpatory evidence. His lawyer reiterated that a polygraph test supports his innocence claim. In March 2014, senior trial lawyers finally dismissed all charges after a complete review of the case.

Sadly, the client lost his job, his family (his wife left him), and he endured fourteen months of pretrial incarceration. A more thoughtful consideration of the evidence- including the polygraph- might have lessened the pain and suffering he endured. Most professional examiners readily acknowledge polygraph as imperfect. However, a quality control-supported "passed" polygraph should not be ignored.

In January 2015, the client hired a civil lawyer and filed a Complaint for Damages in U.S. District Court. The defense retained me as an expert witness and scheduled deposition for June 23, 2015. The case was settled on June 18, 2015, in favor of client.

Justice is served. TRUST YOUR CHARTS!!!

The Continuous Display of Respiration Excursion

By Donald J. Krapohl and Pamela Shaw[I]

Of the traditional polygraph data channels, score assignment for responses in the pneumograph is the most challenging and has the greatest potential for disagreement. Because of these difficulties some examiners score the pneumograph (or respiration) waveform more conservatively than they do the other channels. A minority of examiners ignore the pneumograph altogether except for artifact detection, potentially discarding information of diagnostic value. The difficult task of scoring the pneumograph was eased substantially by the paring down of the number of scorable features from more than a dozen in years past to only the valid few taught today. The addition of respiration line length (RLL) as an overall scoring concept was also helpful. RLL not only seemed to outperform the pattern-

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I Past Presidents of the APA, and authors of the textbook Fundamentals of Polygraph Practice, now available for preorder through Elsevier's Academic Press. The authors have no financial or proprietary interest in any of the products or services listed in the article. The opinions expressed in this article are solely those of the authors, and do not necessarily represent the policy or views of the US Government. The authors would like to express sincere gratitude to Mark Jansen and Mark Handler for providing key details to this paper. Mr. Krapohl can be reached at krapohld@gmail.com.

recognition approach to scoring (Krapohl & McManus, 1999), it was measureable. When something can be measured, subjectivity, and hence disagreement, can be reduced.

In the field, the problem with RLL has been that it is not as obvious to the eye as are the classic pneumograph patterns of suppression, slowing and baseline rise. To aid the examiner manufacturers have offered software tools that can automatically measure RLL during the scoring windows. Though these measurements can be very helpful, they do not provide a full context of what has been going on RLL-wise over the entirety of the chart.

As an alternative to showing RLL simply as a number, it is a straightforward step for computer software to create a moving index of RLL over the entire course of the chart. In other words, the computer could represent RLL as a continuous line rather than simply a number tied to a scoring window. This line may take a form reminiscent of the EDA tracing. When there are substantial deviations in RLL, one could expect the line to shift accordingly. Larger excursions would represent shorter line lengths (stronger reactions) than would smaller shifts (weaker reactions). As such, examiners may be able to use chart divisions as a convenient way to compare reaction intensities between questions for the pneumograph just as they currently do with EDA and cardiograph tracings. And like EDA and cardiograph tracings, the variability of RLL-based responses could be assessed over the entire chart. When variability is high, differences in RLL may be less meaningful than when variability is low. Without a gauge of that variability, however, judgments and scores are less well informed.

Closely related to RLL is another measure called respiratory excursion (RE). RE is the sum of Y-axis excursions over a specified period of time. (Yes, it sounded confusing to us the first time we heard it, too.) RE is new to many examiners, so it calls for an explanation in plain English. Imagine an X-Y graph where the X is the horizontal axis, and Y is the vertical axis. On a polygraph chart, X would represent the passage of time and Y would be a measurement of the physiology at each point in time. The continuous measurement of Y would produce a line as time passes. This is, in essence, how polygraph data are presented on the screen, with lines changing their vertical position (Y) over time (X). RE is calculated by measuring at regular intervals the distance the Y point has moved vertically from its previous position, and summing those measurements. For example, if samples are taken every second, measurements of a change in the data in the vertical direction would be

taken every second. Those measurements would be added together for whatever time window is of interest. If there are fewer or smaller excursions in that period of time (e.g., respiratory suppression or slowing), it would signal a stronger reaction than when there are more or bigger excursions.

In the following section are segments of traditional respiration and the corresponding continuous RE to demonstrate how an RE display might be useful. These segments are taken from field cases recorded with Lafayette software, but other manufacturers may have this or a similar capability. The RE tracing uses a 10-second window, and looks backward. Therefore, at any time point in the chart the RE line will represent the previous 10 seconds worth of data. Also, the tracing has been inverted such that smaller excursions (stronger reactions) cause the line to go upward rather than down, just as the polygraph convention of representing a reduction in skin resistance as the movement upward of the EDA tracing. For ease of illustration, the EDA, cardiograph and PPG tracings have been removed, and only one pneumograph and the continuous RE tracings are shown.

First, let us see how the tracings appear on a chart. The top line in Figure 1 is the standard pneumograph tracing, and the lower line is the continuous RE tracing. Note that there are small undulations in the RE tracing, a consequence of the 10-second window capturing the respiration waveform at different points in its rise and fall. As explained in the previous paragraph, smaller excursions move the RE line upward.

Figure 1. Respiration (top) and continuous RE (bottom) tracings.

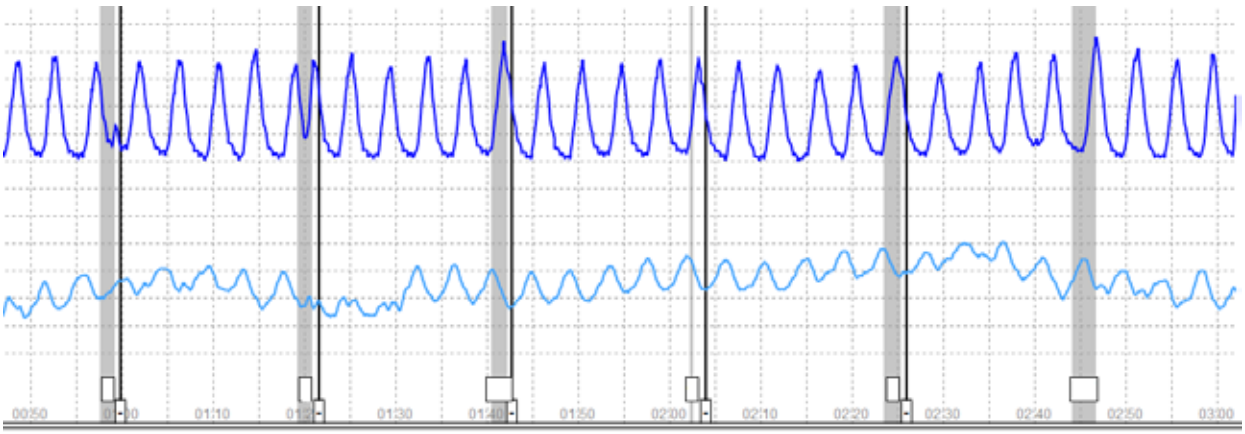
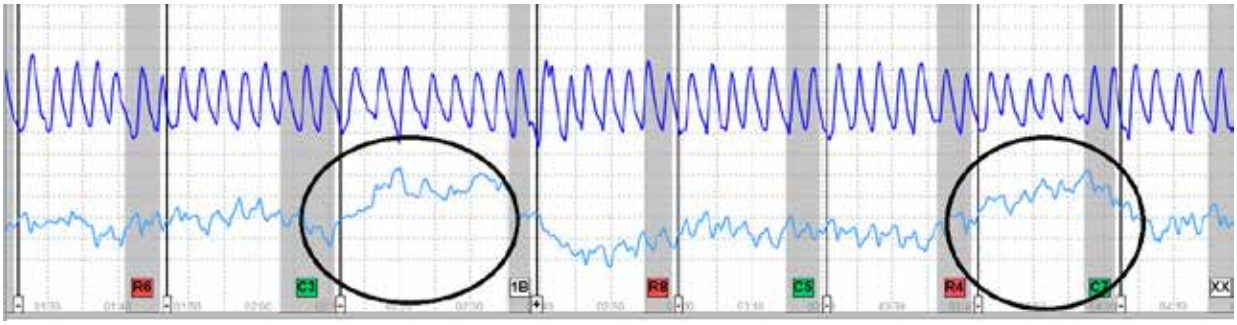


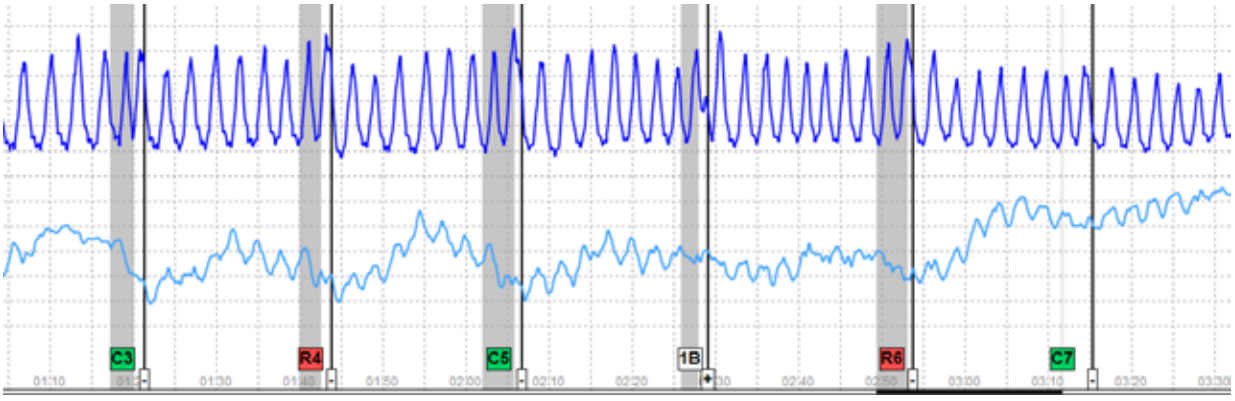
Figure 2 is taken from a different case. Observe that the RE line is relatively flat overall, similar to Figure 1, except for two timely rises at C3 and R4 (circled). In the context of the flat and stable RE line, the changes at C3 and R4 are noticeable. In the standard pneumograph tracing there are subtle but observable changes in amplitude and rate. While the changes in the standard pneumograph may not be meaningful to novice examiners, the change in RE draws attention to the responses, and suggests that scoring may be appropriate.

Figure 2.



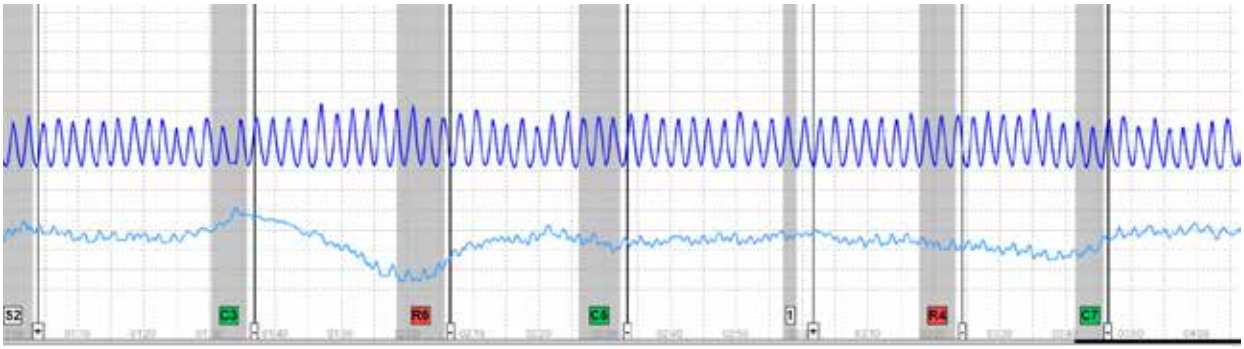
It is important to note that the RE response must be timely, typically initiating a rise from 3 to 10 seconds following question onset. If it is too early, the suppression took place before the question was asked; too late and the suppression was probably not timely to the test question. As mentioned earlier, the display of continuous RE affords context for individual responses. In Figure 3 there appears to be a slight suppression on R6. The RE line indicates that there are also suppressions on most other questions, and that the RE response to R6 may be somewhat late. This information may temper the significance of the apparent suppression at R6.

Figure 3. Rise in the RE line at R6, the meaning of which should be gauged against rises at other questions.



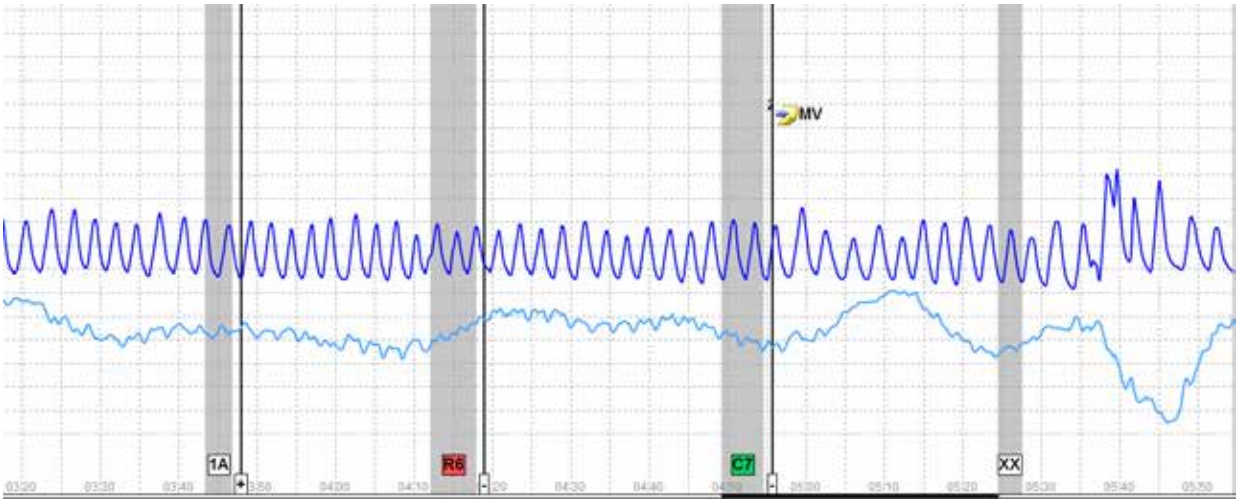
As another example of how context is important in the interpretation of a rise in the RE line is how it compares to the overall baseline. Typically, a scorable rise will be higher than the overall baseline. Remember that the RE line will move upward if RE grows shorter than it had been in the previous chart segment. Often this will signify a significant reaction. Other times, though, it may show that the examinee is returning to his normal breathing rhythm and rate after a period of over-breathing. See Figure 4. An apparent upward movement in the RE line at R6 in this case is due to the examinee returning to normal after larger inhalations just before the question. This is made obvious by the RE not rising to a new height, but rather to its previous baseline.

Figure 4. Rise in RLL line due to recovery to norm after over-breathing.



Examinee movements can also generate pneumograph responses that are manifested in the RE tracing. See Figure 5 as an example. Note the changes at C7.

Figure 5. Effect of movement on the pneumograph and RLL tracings.



The next five figures are intended to show examples of rises in the RE tracing indicative of scorable responses.

Figure 6. RE response toC5.

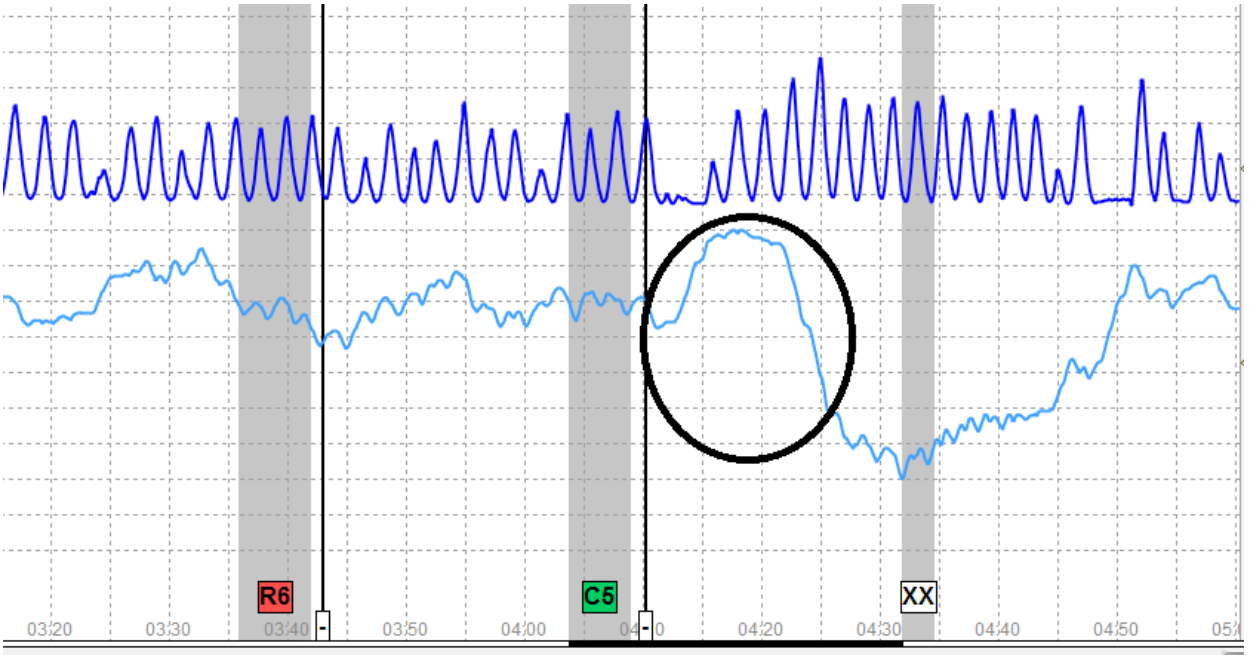


Figure 7. RE response to R6

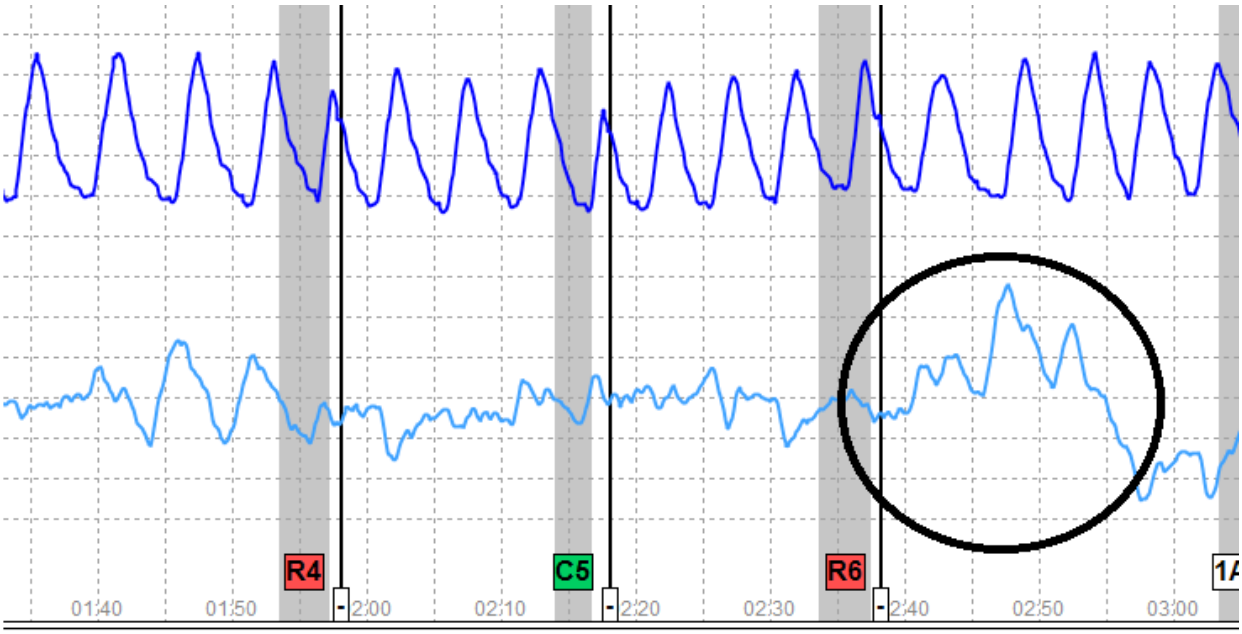


Figure 8. RE response to C29. The examinee's entire pneumograph tracing was relatively unstable. Nevertheless, useful RE information could still be extracted in this case.

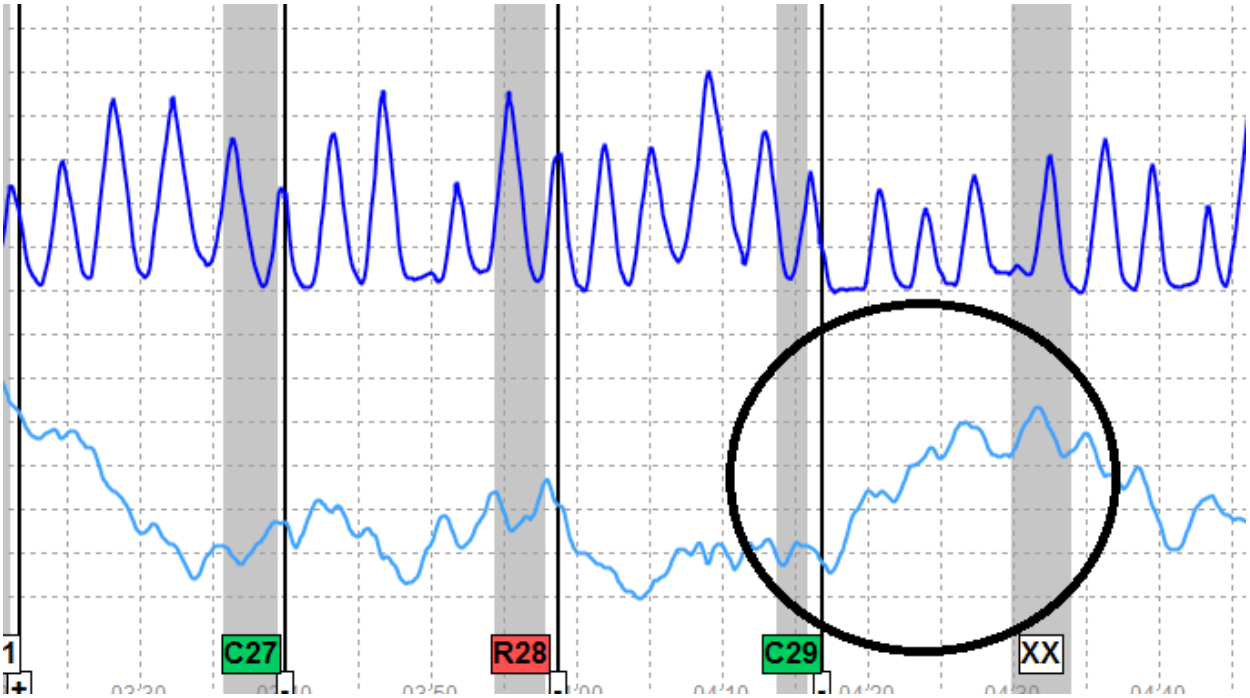


Figure 9. RE response to R28.

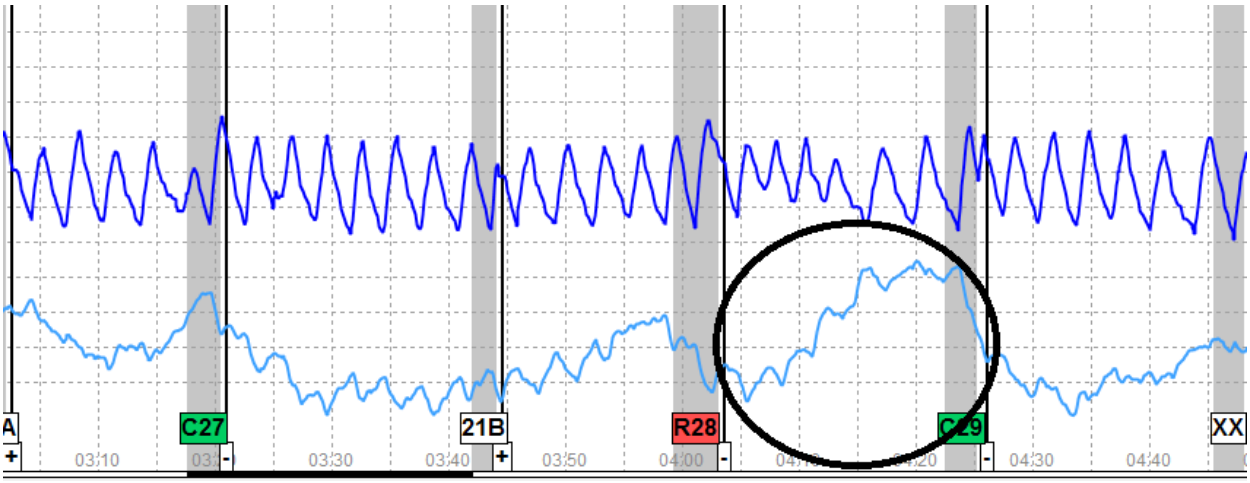
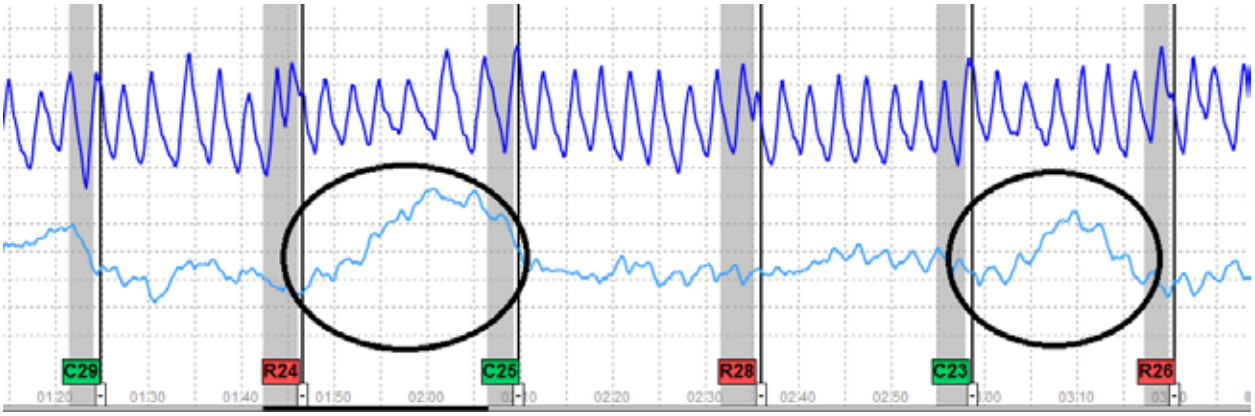


Figure 10. RE responses at R24 and C23.



Summary

The advent of computer polygraphs has enabled examiners to display data in ways that were not possible with analog systems. Exploitation of the capabilities of computer polygraphs is just beginning, opening the door to yet-unforeseen improvements in how polygraph data are analyzed. In the case of continuous RE, when it is used in conjunction with the standard pneumograph tracings it can

help examiners to better recognize diagnostic information when it is there, and to form better opinions on when to assign scores. The display may give confidence to examiners otherwise reluctant about interpreting the pneumograph. On the other side, the RE tracing may also bring circumspection to examiners who are excessively generous in assigning pneumograph scores. At a minimum, the manner in which RE is continuously represented on the chart gives all examiners a common metric to help shape their analyses.

Though we have used the expression Respiration Excursion and acronym RE here, the concept is mathematically similar to RLL in the most general sense, in which both produce values that become smaller as the response intensity increases. For convenience some examiners have lumped these two concepts together, referring to them both as RLL. Though technically incorrect, the concepts are so highly correlated there is little harm in using RLL as shorthand for both concepts except when precision is needed, such as in research or swore testimony.

With our current level of understanding it would not be prudent to rely on the RE tracing alone for scoring. This new form of display supplements, but does not supplant the standard pneumograph. Rather, the RE tracing provides an alternative view of existing data, a potentially valuable view that gives the examiner a better chance of maximizing the available information in the pneumograph channel. With maximal utilization of diagnostic information, examiners may experience a reduction in inconclusive rates.

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Krapohl, D., and McManus, B. (1999). An objective method for manually scoring polygraph data. Polygraph 28(3), 209-223.

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IN THE UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
TAMPA DIVISION

UNITED STATES OF AMERICA

V. **Case No. 8:14-Cr-379-T-36TGW**

JESUS HERNANDEO ANGULO MOSQUERA

_____/

DECLARATION OF POLYGRAPH EXPERT

DR. DAVID C. RASKIN

I, David C. Raskin, Ph.D., state and declare as follows:

1. I received my Ph.D. degree in psychology from the University of California, Los Angeles in 1963. I specialized in experimental psychology, human psychophysiology, quantitative methods, and statistical analysis. I have served on the faculties of UCLA, Michigan State University, the University of British Columbia, and the University of Utah, where I presently hold the rank of Professor Emeritus of Psychology. For 51 years, I have conducted and published scientific research in human psychophysiology. For 44 years, I have conducted laboratory and field research on polygraph techniques for the detection of deception, taught university and applied courses about polygraph techniques, trained government and law enforcement polygraph examiners, and published extensively on polygraph techniques. I have served as an expert witness in approximately 250 criminal and civil cases in federal and state courts in the United States, Canada, and Sweden. My Curriculum Vitae accurately provides a list of my education, training, publications, presentations, employment history, and appearances as an expert witness. I have been informed by Counsel that my Curriculum Vitae has already been provided to the Court.

2. I conduct polygraph examinations and provide professional consultations and evaluations of polygraph examinations all over the United States. I was trained and certified in field polygraph testing techniques at the Backster School of Lie Detection in New York City in 1973. The

Backster School of Lie Detection is an American Polygraph Association accredited institution for the training of polygraph examiners.

3. I have provided instruction, workshops, and consultations for the United States Government, including the Department of Defense National Center for Credibility Assessment, Secret Service, Federal Bureau of Investigation, Drug Enforcement Administration, Customs and Border Protection, Department of Energy, Central Intelligence Agency, Department of Homeland Security, Department of State, Department of Justice, Department of the Treasury, Bureau of Alcohol, Tobacco, Firearms, and Explosives, Air Force, Army Intelligence, and Federal Reserve System. I have also provided testimony and consultations to the US Senate Committees on Watergate, Judiciary, Armed Services, and Labor and Human Resources. I have also provided expert testimony, consultations, and training to foreign governments and courts, including Canada, China, Colombia, Indonesia, Israel, Korea, Mexico, Norway, and Sweden. I have also performed expert evaluations and training for state and local law enforcement agencies all over the United States and Canada.

VALIDITY OF POLYGRAPH TESTS

4. Polygraph tests have gained general acceptance in the scientific fields of psychology and psychophysiology and in the areas of those disciplines devoted to credibility assessment. Psychophysiological credibility assessment, commonly known as polygraph testing, has long passed the experimental stage.

5. In practice, virtually all polygraph instruments used for psychophysiological credibility assessment record measures from at least three physiological systems that are controlled by the autonomic nervous system. Recordings are usually made of palmar sweating (commonly known as the galvanic skin response or the electrodermal response), relative blood pressure (obtained from an inflated cuff on the upper arm), and respiration (obtained from volumetric sensors placed around the chest and/or abdomen). Many field polygraph instruments also make measurements of peripheral vasomotor activity and monitor the subject's movements.

6. The basis of polygraphy or psychophysiological credibility assessment is a scientific theory that can be and has been tested with the methods of science. Any conscious effort at deception by a rational individual causes involuntary and uncontrollable physiological responses through the autonomic nervous system that may include measurable reactions in blood pressure, peripheral pulse-amplitude, breathing and electrodermal response.

7. **Comparison Question Tests**. The most commonly used techniques for the psychophysiological detection of deception are comparison question tests (CQT). The theory of these comparison question tests is as follows: The CQT assesses a person's credibility by looking for a differential reaction between two types of questions. The first type of question is known as a relevant question. Relevant questions are direct accusatory questions that address the issue under investigation (e.g., Did you shoot John Doe?). The second type of questions, comparison questions, are ambiguous questions to which the examiner usually elicits a "No" answer (e.g., Before 2010, did you ever do anything that was dishonest, illegal or immoral?). Another version of the CQT directs the subject to answer comparison questions with a lie (e.g., In your entire life, did you ever tell even one lie?).

8. The rationale of the comparison question test predicts that guilty subjects will produce larger physiological responses to the relevant questions to which they know they are deceptive, than to the relatively unimportant comparison questions. Innocent subjects are expected to produce larger physiological responses to the comparison questions, to which they are assumed to be either deceptive or uncertain of the veracity of their answer, than to the truthfully answered relevant questions.

9. The CQT technique is based on sound underlying scientific theories and has been tested by the scientific method. As the documents cited in this declaration demonstrate, the basic scientific theory of the psychophysiological detection of deception and the various techniques used for the detection of deception have been subjected to numerous scientific tests during the past 30 years. The results of those scientific tests have been published in high quality peer-reviewed scientific journals.

10. The CQT technique was used in the polygraph test administered to Jesus Hernando Angulo-Mosquera on November 6, 2014 by retired FBI Special Agent James Orr. I have been informed by Counsel that his report of the polygraph examination dated November 6, 2014 has already been provided to the Court.

11. **There are known error rates.** There have been numerous studies published in peer-reviewed scientific journals that test the theory of the psychophysiological detection of deception and provide estimates of the error rates for comparison question tests. Science has approached the problem of assessing the accuracy of comparison question tests in two venues: (1) laboratory studies, and (2) field studies.

a. **Laboratory Research:** Laboratory research is a traditionally attractive alternative because the scientist can control the environment. Moreover, with regard to credibility assessment studies, the scientist can know with certainty who is telling the truth and who is lying by randomly assigning subjects to conditions. Laboratory research on credibility assessment typically includes "deceivers" who have committed a mock crime (e.g., "steal" money or a valuable object from an office) and are instructed to deny the "theft" during a subsequent polygraph test.

i. There are advantages and disadvantages of laboratory research. From a scientific viewpoint, random assignment to conditions is highly desirable because it controls for the influence of extraneous variables that might confound the results of the experiment.[1] Laboratory research on credibility assessment has been criticized as lacking in realism. However, the level of realism in properly designed and conducted laboratory studies does not limit the ability of scientists to apply the laboratory results to real-world settings.[2]

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[1] *See* the extensive discussion of the advantages of random assignment to conditions in T. D. Cook & D. T. Campbell, QUASI-EXPERIMENTATION: DESIGN AND ANALYSIS ISSUES FOR FIELD SETTINGS (1979).

[2] *Id. Also see*, Craig A. Anderson, James J. Lindsay, & Brad J. Bushman, Research in the psychological laboratory: Truth or triviality? 8 CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE 3 (1999). Anderson et al., conclude the following: Correspondence between lab- and field-based effect sizes of conceptually similar independent and dependent variables was considerable. In brief, the psychological laboratory has generally produced truths, rather than trivialities.

ii. Some scientists who conduct research on psychophysiological credibility assessment have attempted to overcome the limitations of the laboratory approach by making the laboratory simulations as realistic as possible.[3] A recent survey of the relevant scientific community indicated that the majority of scientists believe that laboratory studies are a useful tool for policy makers to assess the validity of comparison questions tests.[4]

b. **Field Studies:** The alternative approach in studying psychophysiological credibility assessment is the field study. In this approach, polygraph tests conducted in actual cases are examined. Although field studies are subject to various methodological problems,[5] the chief problem in detection of deception field studies is unambiguously determining ground truth. A method that is independent of the polygraph test outcome is needed to determine who in fact is telling the truth and who in fact is lying. Although a number of approaches have been taken, it is generally agreed that confessions are the best available criterion for ground truth in these studies.[6] Scientists

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[3] *See* John C. Kircher, Steven W. Horowitz & David C. Raskin, Meta-analysis of mock crime studies of the control question polygraph technique 12 LAW AND HUMAN BEHAVIOR 79 (1988). Three factors have been identified as contributing to the realism of laboratory research on the CQT: (1) Use of realistic subject populations. College student subjects have been associated with low accuracy rates, while more representative subject samples from prison populations and the community have been associated with higher accuracy rates; (2) Use of representative field examiners, techniques, and scoring methods. Those laboratory studies that have used field polygraph examiners, and field techniques for administering and scoring the examinations have produced higher accuracy rates; and (3) The use of incentives associated with the outcome of the examinations. Studies with explicit motivations associated with the outcome of the test have produced higher accuracy rates.

[4] Charles R. Honts, Steven Thurber, Dario Cvencek & Wendy Alloway. General acceptance of the polygraph by the scientific community: Two surveys of professional attitudes. Paper presented at the American Psychology-Law Society biennial meeting, Austin, Texas (2002) [hereinafter, The Honts Survey.]

[5] *Supra* Note 1 (Cook & Campbell).

[6] The problems associated with field research in this area are discussed in detail by David C. Raskin, Polygraph Techniques for the Detection of Deception; and in David C. Raskin (Ed.) PSYCHOLOGICAL METHODS IN CRIMINAL INVESTIGATION AND EVIDENCE, 276 (1989) at 264.

who conduct field research generally agree that useful field studies of psychophysiological credibility assessment tests should have all of the following characteristics:[7]

i. Subjects should be sampled from the actual population of subjects in which the researcher is interested. In order to make inferences about tests conducted on criminal suspects, criminal suspects should be the subjects.

ii. Subjects should be obtained by random sampling. Cases must be included without reference to either the accuracy of the original outcome or the quality of the physiological recordings.

iii. The resulting physiological data must be evaluated by persons trained and experienced in the field scoring techniques about which inferential statements are to be made. Independent evaluations by persons who have access to only the physiological data are useful for evaluating the information content of those data. However, the decisions rendered by the original examiners probably provide a better estimate of the accuracy of polygraph techniques that are employed in the field.

iv. The credibility of each subject must be determined by information that is independent of the specific test. Confessions substantiated by physical evidence are presently the best available criterion.

12. A Committee of Concerned Social Scientists filed a *Brief for Amicus Curiae* with the Supreme Court of the United States in the case of *United States v. Scheffer*.[8] They estimated the error rate for polygraph tests by examining high quality laboratory and field studies. They found eight high quality laboratory studies of the CQT. Table 1 below describes the results of these studies

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[7] *See* the reviews by: Charles R. Honts, David C. Raskin & John C. Kircher, The Scientific Status of Research on Polygraph Techniques: The Case For Polygraph Tests, in MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY: Volume 2, D. L. Faigman, D. Kaye, M. J. Saks & J. Sanders (Eds. 2002), and more recently, Charles R. Honts, The Psychophysiological Detection Of Deception, in DETECTION OF DECEPTION IN FORENSIC CONTEXTS, Pär Anders Granhag and Leif Strömwall (Eds. 2004).

[8] Brief of the Committee of Concerned Social Scientists as Amicus Curiae in Support of the Respondent in *United States v. Scheffer*, 44 M.J. 4442 (1996) [hereinafter Committee].

along with two studies overlooked by the Committee and a new study.[9] These high quality laboratory studies indicate that the **CQT very accurately discriminates between truth tellers and deceivers**. Overall, the CQT correctly classified approximately 91 percent[10] of the subjects and produced approximately equal numbers of false positive and false negative errors.

Table 1. The Results of High Quality Laboratory Studies of the Comparison Question Test

	Guilty (%)				Innocent (%)			
Study	n	Correct	Wrong	Inc	n	Correct	Wrong	Inc
Driscoll et al. (1987)[b]	20	90	0	10	20	90	0	10
Ginton et al. (1984)	2	100	0	0	13	85	15	0
Honts, et al. (1994)[a]	20	70	20	10	20	75	10	15
Honts, et al. (2003)[b]	24	92	0	8	24	92	8	0
Horowitz, et al. (1994)[c]	15	53	20	27	15	80	13	7
Kircher & Raskin (1988)	50	88	6	6	50	86	6	8
Patrick & Iacono (1989)	24	92	8	0	24	64	36	0
Podlesny & Raskin (1978)	20	70	15	15	20	90	5	5
Podlesny & Truslow (1993)	72	69	13	18	24	75	4	21
Raskin & Hare (1978)	24	88	0	12	24	88	8	4
Rovner et al. (1979)[a]	24	88	0	12	24	88	8	4
Means	**26.8**	**82**	**7**	**11**	**23.5**	**83**	**10**	**7**
Percent Decisions		**91**	**9**			**89**	**11**	

[9] Lawrence N. Driscoll, et al., The Validity of the Positive Control Physiological Detection of Deception Technique, 15 J. POLICE SCI. ADMIN. 46 (1987); Avital Ginton et al., A Method for Evaluating the Use of the Polygraph in a Real-Live Situations, 67 J. APPLIED PSYCHOL. 131 (1982); Charles R. Honts, et al., Effects Of Outside Issues On The Control Question Test, manuscript in press, J. GEN. PSYCH, (2003); Charles R. Honts et al., Mental and Physical Countermeasures Reduce the Accuracy of Polygraph Tests, 79 J. APPLIED PSYCHOL. 252 (1994); Horowitz et al., The Role of Comparison Questions in Physiological Detection of Deception, manuscript in press with Psychophysiology (1996); John C. Kircher & David C. Raskin, Human Versus Computerized Evaluations of Polygraph Data in a Laboratory Setting, 73 J. APPLIED PSYCHOL. 291 (1988). Christopher J. Patrick, and William G. Iacono, Psychopathy, Threat, and Polygraph Test Accuracy, 74 J. APPL. PSYC. 347 (1989); John A. Podlesny & David C. Raskin, Effectiveness of Techniques and Physiological Measures in the Detection of Deception, 15 PSYCHOPHYSIOLOGY 344 (1978); John A. Podlesny & Connie M. Truslow, Validity of an Expanded-Issue (Modified General Question) Polygraph Technique in a Simulated distributed-Crime-Roles Context, 78 J. APPLIED PSYCHOL. 788 (1993); David C. Raskin & Robert D. Hare, Psychopathy and Detection of Deception in a Prison Population, 15 PSYCHOPHYSIOLOGY 126 (1978); Louis I. Rovner, The accuracy of physiological detection of deception for subjects with prior knowledge, 15 POLYGRAPH 1 (1986).

[10] The results excluded inconclusive outcomes as they are not decisions.

13. The Committee of Concerned Social Scientists[11] also examined the available field studies of the CQT. They identified four field studies[12] that meet the criteria for meaningful field studies of psychophysiological credibility assessment tests. The results of the independent evaluations for these studies are illustrated in Table 2. Independent evaluations of the field studies produced results quite similar to the results of the high quality laboratory studies with an average accuracy of CQT decisions of 90.5 percent.[13] However, in the field studies nearly all of the errors were false positive errors. False positive errors mistakenly conclude that a truthful person was deceptive, as opposed to false negative errors that mistakenly indicate that a deceptive person was truthful.[14]

14. A recent field study by Ginton[15] (2012) employed a novel approach that eliminated the need for external verification, i.e., confession or other evidence. He obtained 64 paired polygraph

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11 *Supra* note 8 (Committee).

12 Charles R. Honts, Criterion development and validity of the control question test in field application, THE JOURNAL OF GENERAL PSYCHOLOGY 509, 123 (1996).; Charles R. Honts & David C. Raskin, A Field Study of the Directed Lie Control Question, 16 J. POLICE SCI. ADMIN. 56 (1988); Christopher J. Patrick & William G. Iacono, Validity of the Control Question Polygraph Test: The Problem of Sampling Bias 76 J. APPLIED PSYCHOL. 229 (1991); David C. Raskin et al., A STUDY OF THE VALIDITY OF POLYGRAPH EXAMINATIONS IN CRIMINAL INVESTIGATIONS, Final Report to the National Institute of Justice, Grant Number 85-IJ-CX-0400, Department of Psychology, Salt Lake City University of Utah (1988).

13 The results excluded inconclusive outcomes that are not decisions.

14 See the discussion in Raskin et al., *supra* Note 7 and in Honts, *supra* Note 12, concerning the performance of original examiners in these studies. They note that the original examiners in the Patrick and Iacono study perform at a much higher level than the independent evaluators. This finding was not representative of the other three field studies. The original examiners in the Patrick and Iacono study, *supra* Note 12, correctly classified 100% of the guilty and 90% of the innocent subjects. This performance is quite similar to the original examiners in the Honts (1996) field study, *supra* Note 12, who were from the same law enforcement agency. Raskin et al., *supra* Note 7, and Honts, *supra* Note 12, have argued that the independent evaluator data from the Patrick and Iacono study should be viewed as an anomaly. If the Patrick and Iacono data are excluded, the field estimate of the accuracy of CQT decisions is 95.5%, Raskin et al., *supra* Note 7.

15 Avital Ginton, A non-standard method for estimating accuracy of lie detection techniques demonstrated on a self-validating set of field polygraph examinations, PSYCHOLOGY, CRIME & LAW, DOI:10.1080/1068316X.2012.656118 (2012).

tests from the files of the Israel Police in which opposing evidence was provided by the two examinees. Based on algebraic calculations, Ginton found that the accuracy of CQT decisions was 94% on guilty suspects and 84% correct on innocent suspects. These results reinforce the findings of 90% overall accuracy of the field studies cited above. Significantly, Ginton's paradigm overcomes the objection that the false negative rate is underestimated and the confession criterion is not independent of the polygraph test result.

15. The high quality field studies indicate high accuracy for the CQT on the basis of the data represented in Table 2, which were derived from independent evaluations of the physiological data. This is a desirable practice from a scientific viewpoint, because it eliminates possible contamination (e.g. knowledge of the case facts and the overt behaviors of the subject during the examination) that might be included in the decisions of the original examiners. However, independent evaluators rarely offer testimony in legal proceedings. Typically, the original examiner provides the testimony. Thus, accuracy rates based on the decisions of independent evaluators may not be the figure of merit for legal proceedings. The Committee of Concerned Social Scientists summarized the data from the original examiners in the studies reported in Table 2 and two additional studies that are favored by critics of the CQT.[16]

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[16] Those two studies are, Benjamin Kleinmuntz & Julian J. Szucko, A field study of the fallibility of polygraphic lie detection, 308 NATURE 449 (1984); Frank Horvath, The effects of selected variables on interpretation of polygraph records 62 JOURNAL OF APPLIED PSYCHOLOGY 127 (1977). Neither of these studies meets the generally accepted requirements for useful field studies. Nevertheless, they are cited by critics of the CQT as evidence that the CQT is not accurate. The study reported by Benjamin Kleinmuntz and Julian J. Szucko, A field study of the fallibility of polygraphic lie detection, 308 NATURE 449 (1984) fails to meet the criteria for a useful field study because: The subjects were employees who were forced to take tests as part of their employment, not criminal suspects. The case selection method was not specified. Students at a polygraph school that does not teach blind chart evaluation evaluated the data. Moreover, those students were given only one-ninth of the usual amount of data collected in a polygraph examination and were forced to use a rating scale with which they were not familiar. The study reported by Frank Horvath, The effects of selected variables on interpretation of polygraph records, 62 JOURNAL OF APPLIED PSYCHOLOGY 127 (1977), also fails to meet the criteria for a useful study because: About half of the innocent subjects were victims of violent crime, not suspects. Virtually all of the false positive errors in that study were with innocent victims, not innocent suspects. In addition, the persons doing the blind evaluations were all trained at a polygraph school that does not teach blind chart evaluation. Finally, cases were not selected at random. Some cases were excluded from the study because of the nature of the charts. An interesting fact that critics almost never mention is that the decisions by the original examiners in

[Footnote continued on next page]

Table 2. Accuracy of Independent Evaluations in High Quality Field Studies of the Comparison Question Test

		Guilty (%)			Innocent (%)			
Study	n	Correct	Wrong	Inc	n	Correct	Wrong	Inc
Honts (1996)[a]	7	100	0	0	6	83	0	17
Honts & Raskin (1988)[b]	12	92	0	8	13	62	15	23
Patrick & Iacono (1991)[c]	52	92	2	6	37	30	24	46
Raskin et al. (1989)[d]	37	73	0	27	26	61	8	31
Means	**108**	**89**	**1**	**10**	**82**	**59**	**12**	**29**
Percent Decisions		**98**	**2**			**83**	**17**	

[a]Sub-group of subjects confirmed by confession and evidence.
[b]Decision based only on comparisons to traditional comparison questions.
[c]Results from the mean blind rescoring of the cases "verified with maximum certainty" (p.235)
[d]These results are from an independent evaluation of the "pure verification" cases.

16. The data for the original examiners presented in Table 3 clearly indicate that the original examiners were even more accurate than the independent evaluators.

Table 3. Percent Correct Decisions by Original Examiners in Field Cases

Study	**Innocent**	**Guilty**
Horvath (1977)	100	100
Honts and Raskin (1988)	100	92
Kleinmuntz and Szucko (1984)	100	100
Raskin, Kircher, Honts, & Horowitz (1988)[a]	96	95
Patrick and Iacono (1991)	90	100
Honts (1996)[b]	100	94
Means	**98**	**97**

[a]Cases where all questions were confirmed.
[b]Includes all cases with some confirmation.

[Footnote continued from previous page]

the Horvath Study were 100% correct. *See also* the discussion in David C. Raskin, Methodological Issues in estimating polygraph accuracy in field applications, 19 CANADIAN JOURNAL OF BEHAVIORAL SCIENCE 389 (1987).

17. The scientific data concerning the validity (the accuracy and error rate) of the polygraph can be summarized as follows: **High quality scientific research from the laboratory and the field converge on the conclusion that a properly conducted CQT is a highly accurate discriminator of truth tellers and deceivers. The research results indicate an accuracy estimate that exceeds 90 percent.** Moreover, original examiners, who are most likely to offer testimony, produce even higher estimates of accuracy than independent evaluators. There may be a tendency for the CQT to produce more false positive than false negative errors, but this trend in the current literature is not particularly strong.[17] Moreover, no tendency toward false positive errors is seen in the decisions of the original examiners.

18. The scientific validity of a properly administered polygraph examination in a real life case compares favorably with such other forms of scientific evidence, such as X-ray films, electrocardiograms, fiber analysis, ballistics comparison tests, blood analysis. Furthermore, polygraph evidence is far more reliable than other forms of expert testimony, such as psychiatric and psychological opinions of sanity, diminished capacity, dangerousness, and many of the posttraumatic stress/recovered memory syndromes.[18]

ISSUES REGARDING THE VALIDITY OF POLYGRAPH TESTS

19. There are several concerns that are commonly raised about factors that might increase the error rate associated with polygraph tests.

a. **Countermeasures:** A Countermeasure is anything that a subject might do to attempt to distort or defeat a polygraph test.[19] Detailed reviews of the scientific literature on

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[17] This is especially true if the outlying data produced by the Patrick and Iacono study, *supra* Note 12, are discounted.

[18] *See* the discussion in, Charles R. Honts & Mary V. Perry, Polygraph Admissibility: Changes and Challenges, 16 L. & HUM. BEHAV. 357 (1992), and Charles R. Honts & Bruce D, Quick, The polygraph in 1995: Progress in science and law, NORTH DAKOTA LAW REVIEW 71 (1995).

[19] Charles Honts & Susan Amato (2002). Countermeasures, in Murray Kleiner (Ed.), HANDBOOK OF POLYGRAPH TESTING. London: Academic (251-64) (2002).

countermeasures are available in a number of sources.[20] These reviews of the scientific literature on countermeasures have concluded the following:

i. There is no credible scientific evidence that drugs or other countermeasures designed to affect the general state of the subject are effective against the CQT.[21] Although some laboratory studies have indicated that training in specific point countermeasures designed to increase responding to comparison questions may produce a substantial number of false negative outcomes when used against both the comparison question and the concealed knowledge tests,[22] it is important to note that competent training in these countermeasures is critical to their effectiveness. Subjects who are given only information[23] or who spontaneously attempt countermeasures[24] are unable to achieve the desired effects, and the required training is difficult to obtain.[25] Honts and Perry noted that there are no easy answers to the problem of subjects trained to employ countermeasures, it

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20 *e.g.*, Charles R. Honts & Mary V. Perry, Polygraph Admissibility: Changes and Challenges, 16 L. & HUM. BEHAV. 357, 373 (1992) ; Charles R. Honts, Interpreting research on polygraph countermeasures. 15 J. Police Science and Administration 204 (1987); Charles R. Honts, et al., Mental and Physical Countermeasures Reduce the Accuracy of Polygraph Tests. 79 JOURNAL OF APPLIED PSYCHOLOGY 252 (1994), Raskin et al., *supra* Note 7.

21 *Id*., Honts (1987); *id*., Raskin et al.

22 See e.g., Charles R. Honts, David C. Raskin, & John C. Kircher, Mental and Physical Countermeasures Reduce the Accuracy of Polygraph Tests. 79 JOURNAL OF APPLIED PSYCHOLOGY 252 (1994).

23 Rovner (1986), *supra* note 9; Wendy Alloway & Charles R. Honts, An Information Countermeasure has no Effect on the Validity of the Test for Espionage and Sabotage (TES). Paper presented at the annual meeting of the Rocky Mountain Psychological Association, Park City, Utah (2002, April).

24 Charles R. Honts, David C. Raskin, John C. Kircher & Robert L. Hodes, Effects of Spontaneous Countermeasures on the Physiological Detection of Deception, 16 JOURNAL OF POLICE SCIENCE AND ADMINISTRATION 91 (1988); Charles R. Honts, Susan Amato & Anne K. Gordon, Effects of Spontaneous Countermeasures Used Against the Comparison Question Test 30 POLYGRAPH 1 (2001); Kimberly Otter-Henderson, Charles R. Honts, & Susan Amato, Spontaneous Countermeasures During Polygraph Examinations: An apparent exercise in futility, 31 POLYGRAPH, 9 (2002). These three studies produce very similar results that can be summarized as follows: spontaneous countermeasure attempts were common, even among innocent subjects. However, spontaneous countermeasures had no effects on the test outcomes of guilty subjects, but lowered (shifted the average score in the deceptive direction) the scores of innocent subjects.

25 Honts and Perry, *supra* note 17 at 376.

appears that computerized analysis of the physiological records substantially reduces the false negative rate attributable to countermeasure use.[26] Users of polygraph information should weigh the usefulness of the polygraph outcome against the probability that the subject received expert training in the use of countermeasures and practiced it successfully. In this regard, the polygraph test is not different from any psychological test where the scoring key could be discovered and unethically revealed to the person being tested.

ii. The popular notion that a "pathological," "psychopathic," "sociopathic" or "criminally hardened" liar cannot be tested successfully with the polygraph has no basis in scientific fact. "Psychopathic" or "criminally hardened" liars, including those clinically diagnosed with Antisocial Personality Disorder, respond quite satisfactorily when attempting deception and are as easily detected in their deception as normal individuals.[27]

iii. Psychotic persons may not be suitable subjects for polygraph testing, especially when they experience psychotic episodes, delusions, or hallucinations during the examination. These subjects might sincerely believe such delusions to be fact. Persons psychotic to this degree would be recognized as such by any experienced examiner.

iv. There are no known traits of personality or personality disorders that would allow or predispose a deceptive person to pass a properly conducted polygraph examination.[28]

COMPARISON QUESTION TEST (CQT)

20. **The CQT polygraph technique described above is generally accepted in the relevant scientific community.** This acceptance is demonstrated by a number of sources of evidence, including professional community surveys, the existence of peer-reviewed publications, the

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26 *Id*. at 374; also see Honts et al., (1994) *supra* note 19.

27 Numerous studies have addressed the question of whether psychopaths can beat the polygraph, e.g. Raskin and Hare, *supra* note 9; *see also* the analysis and review by Charles R. Honts, David C. Raskin, & John C. Kircher, 19, Effects of Socialization on the Physiological Detection of Deception. JOURNAL OF RESEARCH IN PERSONALITY, 373 (1985).

28 *Id*., Honts et al.; *see also* Charles R. Honts, David C. Raskin, & John C. Kircher (1986, October). Individual differences and the Physiological Detection of Deception. Paper presented at the annual meeting of the Society for Psychophysiological Research, Montreal, Canada.

proliferation of peer-reviewed scientific publications and journals, and a recent report by the National Research Council of the National Academy of Sciences.

21. **Surveys.** There are at least four surveys that directly address the general acceptance of the CQT.[29] All of these surveys have included members of the Society for Psychophysiological Research (SPR). The SPR is a professional society of scientists (Ph.D. and M.D.) who study how the mind and body interact. Thus, the SPR is an appropriate scientific community for assessing general acceptance.

a. **Gallup Survey**: In 1982, The Gallup Organization undertook the initial survey, which was later replicated and extended by Susan Amato's Master's Thesis at the University of North Dakota in 1994. The results of these surveys are consistent and lead to the conclusion that there is a great deal of acceptance of polygraphs in the relevant scientific community.

i. Approximately two thirds of the Ph.D. and M.D. members of the SPR who were surveyed stated either that polygraph tests are a valuable diagnostic tool when considered with other available information or that polygraph tests are sufficiently reliable to be the sole determinant.[30]

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[29] The Gallup Organization, Survey of the Members of the Society for Psychophysiological Research Concerning their Opinions of Polygraph Test Interpretations, 13 POLYGRAPH 153 (1984)[hereinafter, The Gallup Survey]; Susan L. Amato, A SURVEY OF THE MEMBERS OF THE SOCIETY FOR PSYCHOPHYSIOLOGICAL RESEARCH REGARDING THE POLYGRAPH: OPINIONS AND IMPLICATIONS. Unpublished Master's Thesis, the University of North Dakota, Grand Forks (1993) [hereinafter, The Amato Survey]; William Iacono and David Lykken partially presented in The Scientific Status of Research on Polygraph Techniques: The Case For Polygraph Tests, in MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY, D. L. Faigman, D. Kaye, M. J. Saks, & J. Sanders (eds. 1997); also partially available at The Validity of the Lie Detector: Two Surveys of Scientific Opinion, 87 J. APPLIED PSYCH. 426 (1997) [hereinafter, The Iacono & Lykken Survey]; The Honts Survey, *supra* note 4.

[30] Respondents in both surveys gave responses to the following question: Which one of these four statements best describes your own opinion of polygraph test interpretations by those who have received systematic training in the technique, when they are called upon to interpret whether a subject is or is not telling the truth? A) It is a sufficiently reliable method to be the sole determinant, B) It is a useful diagnostic tool when considered with other available information, C) It is questionable usefulness, entitled to little weight against other available information, or D) It is of no usefulness.

ii. In the Amato Survey, when only those respondents who reported that they were highly informed about the polygraph literature were included, the percentage that opined that polygraph tests are a useful diagnostic tool increased to 83%. Of those individuals who rated themselves as highly informed, fewer than 10% reported being involved in conducting polygraph examinations professionally. Therefore, these results were not skewed by the financial self-interest of the respondents.

b. **Iacono and Lykken Survey**: The Iacono and Lykken Survey also addressed the members of the SPR. Although the Iacono and Lykken survey produced more negative views of the polygraph than the Gallup and Amato surveys, the Iacono and Lykken survey is seriously flawed and is so surrounded by controversy and uncertainty that the results are not useful for any scientific or probative purpose.[31]

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[31] Drs. Iacono and Lykken are two of the most outspoken critics of polygraph testing. However, the Iacono and Lykken Survey is so flawed and at this time so controversial, that it cannot be used for any substantive purpose. Problems with the Iacono and Lykken study include: (1) The cover letter for the Iacono and Lykken Survey sets the survey in the context of the legal admissibility of the polygraph in court, rather than about the scientific validity of the technique. In effect this is asking the respondents to make a political and legal judgment rather than a scientific one. This is in clear contrast to the Amato Survey that was set in the context of whether or not the SPR should have a formal scientific policy regarding the validity of polygraph testing. The context of the Iacono and Lykken Survey is clearly inappropriate since few, if any, of the members of the SPR have the legal background to make an admissibility assessment. (2) Through discovery and cross examination in the cases of *The State of Washington v. Daniel Galleqos*, 95-1-02749-7 (1996) and *Steve Griffith v. Muscle Improvement, Inc.*, Superior Court of California, sworn deposition 21 April 1998, it was revealed that the sample of respondents to the Iacono and Lykken survey described themselves as very uninformed about the topic of polygraph examinations. Iacono and Lykken's respondents were asked "About how many empirical studies, literature reviews, commentaries, or presentations at scientific meetings dealing with the validity of the CQT have you read or attended?" Unfortunately, subjects were asked to respond on a bizarre non-linear scale. Conversion of the scale units to item exposure rates reveals that the average respondent replied that she or he had been exposed to 3 items on the validity of the polygraph. Since the responses on this non-linear scale must have a strong positive skew, this means that many more than 50% of the subjects must have responded that they had been exposed to fewer than 3 items. Given the large number of scientific articles and presentations on this topic, the data provide a strong indication that the Iacono and Lykken sample was, as a whole, highly uninformed about the polygraph, and thus has little to offer in terms of an informed opinion about its scientific validity. Unfortunately, Iacono and Lykken did not include any of this information in either of their publications and those results would remain unknown were it not for the discovery and cross-examination processes. (3) There is one known anomaly in the Iacono and Lykken data analysis that makes it impossible to compare some of their results to the other surveys in any meaningful way. In determining their highly informed group, Iacono and Lykken cut the distribution at 4 and above on their 7-point scale. In forming their highly informed group, Amato and Honts cut the distribution at 5 and above. This difference in cutting scores makes it

[Footnote continued on next page]

c. **Honts Survey**: Honts and his colleagues reported the most recent survey of scientific opinion regarding the validity of polygraph testing.[32] The Honts Survey also addressed members of the SPR and also assessed the opinions of the members of the American Psychology-Law Society (APLS). The APLS is an organization of scientists and lawyers who study the interaction of scientific psychology and the law. The members of the APLS are familiar with the methodology of applied research for use in legal settings and with legal requirements for the admissibility of scientific evidence. In recent years an increasing amount of research on polygraph testing has been presented at the APLS meetings and in Psychology and Law journals, allowing the members of the APLS to be familiar with much of the current scientific literature on polygraph testing. The Honts Survey found favorable attitudes toward the polygraph from the members of both the SPR and the APLS. Among the items surveyed, The Honts Survey addressed the following major questions:

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impossible to compare these results across the two surveys. Iacono and Lykken's choice of a cutting point almost certainly reduced the confidence estimate by their highly informed subjects. (4) In their chapter in the Faigman et al. book, id., Iacono and Lykken describe their survey as a random survey. However, in the Journal of Applied Psychology version of their survey Iacono and Lykken reveal that their sampling was not random. Drs. Raskin, Honts, and Kircher were deliberately left out of the sampling frame and thus did not have an opportunity to review, respond, or be represented in the survey. (5) Because of the serious anomaly in the data analysis and the self-admitted misrepresentation of the survey in a publication intended for the legal profession, Dr. Amato and Dr. Honts became very concerned that there might be other undisclosed problems with the Iacono and Lykken survey. Under the ethical standards of the American Psychological Association, scientists are required to make their data available for reanalysis by qualified scientists. On March 10, 1997, and now on many subsequent occasions Dr. Amato and Dr. Honts wrote first to Dr. Iacono and then to Dr. Lykken requesting the data from their survey for the purpose of reanalysis. To this date, they have refused to provide free access to their data. On 28 April 1998, Dr. Iacono requested copies of the data from the Amato and Honts survey. Those data were provided to Iacono within two weeks of the receipt of their request. Efforts to obtain the Iacono and Lykken data for reanalysis continue. Until those data are made freely available and a reanalysis can be performed, it is my opinion that the Iacono and Lykken survey data cannot be relied upon for any substantive purpose. A critique of the Iacono and Lykken survey has been published, see David C. Raskin, Charles R. Honts, Susan Amato, & John C. Kircher, *The case for the admissibility of the results of polygraph examinations: 1998 update*. Supplemental pocket part to: D. L. Faigman, D. Kaye, M. J. Saks, & J. Sanders (Eds.) MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY.

[32] The Honts Survey, Supra Note 4.

- "How much weight should policy makers give the results of laboratory studies of the polygraph?" Figure 1 illustrates the complete results of this question.
    - Of the APLS respondents, 81.2% endorsed giving laboratory studies some weight or stronger, and 49.1% endorsed giving moderate or considerable weight.
    - Of the SPR respondents, 76.3% endorsed giving some weight or stronger, and 63.2% endorsed giving moderate or considerable weight.

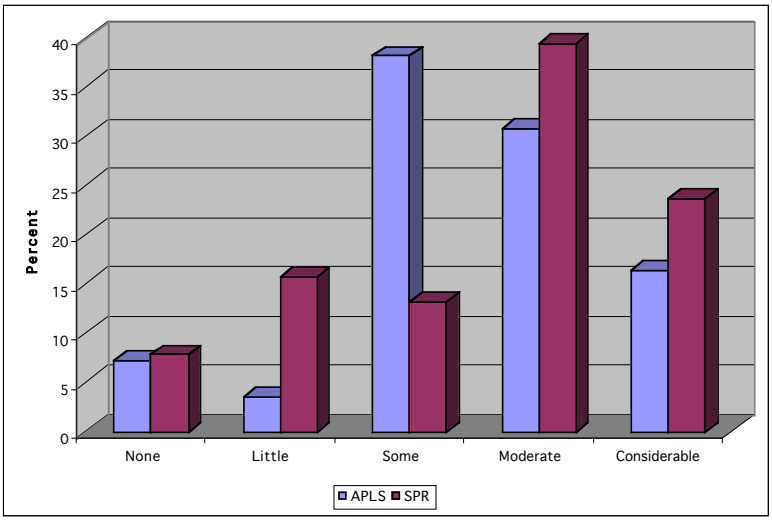

Figure 1. Weight to be given to laboratory polygraph studies.

- "Are polygraph studies published in scientific peer-reviewed journals based on generally accepted scientific methodology?" The percentages "Yes" responses was 95.7% for APLS and 91.4% for SPR.
- Scientists were asked to compare the forensic usefulness of the polygraph in comparison to other commonly offered types of evidence. Respondents from both organizations produced the same pattern of response. The results of this question are shown in Table 4.

Table 4. Usefulness of the Polygraph Compared to Other Forensic Sciences.

Subjects were asked to compare the usefulness (less useful than, about the same as, or more than) of a properly conducted polygraph to other commonly admitted evidence. Percentages shown are those who said that polygraph is as useful or more useful than the evidence with which it was compared.

Evidence	**APLS**	**SPR**
Psychologist's opinion of parental fitness	59.3%	55.6%
Psychologist's opinion regarding malingering	62.3%	55.6%
Eyewitness ID of robbery suspect	74.1%	73.0%
Psych assessment of dangerousness	71.7%	69.4%
Psych assessment of temporary insanity	74.5%	74.3%
Fingerprints	9.3%	16.7%
DNA	1.8%	5.6%

- Respondents were asked: "Would the accuracy of judicial verdicts be increased or decreased if experts could present polygraph test results in courts of law?" The percentage of respondents who opined that verdicts would either be unaffected or would show increased accuracy was 72% for the APLS and 61% for the SPR. Figure 2 illustrates the complete results for this question.

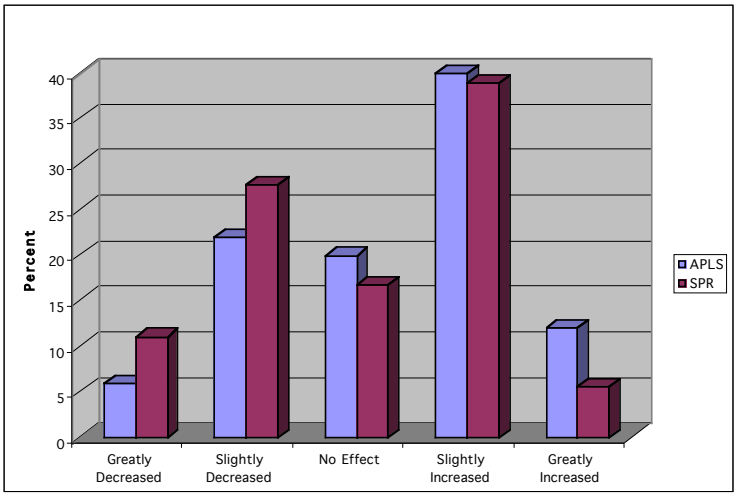

Figure 2. Predicted impact of the admission of polygraph on verdict accuracy.

c. **Peer Review:** The CQT technique has also been widely subjected to publication and peer review. An important indicator of the acceptance of the psychophysiological detection of deception by the scientific community is the large number of original scientific studies published in peer-reviewed scientific journals. Studies that reported positive results for the validity of the

polygraph have appeared in such professional journals as: *The Journal of Applied Psychology*, *The Journal of General Psychology*, *Psychophysiology*, *The Journal of Police Science and Administration*, *Current Directions in Psychological Science*, *Psychological Bulletin*, *The Journal of Research in Personality*, and *Law and Human Behavior*.

i. To be published in any of these journals, the editor first sends an article out for review by two or three independent scientists who are very familiar with the research area but are not personally involved with the article under consideration. These peer-reviewers comment on the quality of the literature review, the research design, the statistical analyses, the reasonableness of the conclusions drawn, and the appropriateness of the article for the respective journal.

ii. The editor of the journal also reviews the article and, based on the editor's evaluation and the comments and recommendations of the reviewers, makes a decision about publication. Revisions are frequently required before an article is accepted for publication, if it is accepted.

iii. Articles with unacceptable scientific methods, statistics, or unsupportable conclusions are not published. Articles that are not acceptable within the scientific discipline covered by the journal are not usually published. For example, the *Journal of Applied Psychology* rejects 85% of the manuscripts submitted for publication.

iv. Articles that report matters that are not acceptable psychological science seldom make it through the peer review process and typically are not published in the *Journal of Applied Psychology* and other high quality scientific journals. The *Journal of Applied Psychology* has published numerous articles on the psychophysiological detection of deception.[33] The

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[33] Some of the articles on the polygraph published in the Journal of Applied Psychology are as follows: P. J. Bersh, A Validation Study of Polygraph Examiner Judgments, Journal of Applied Psychology, 399, 53 (1969); P.O. Davidson, Validity of the Guilty Knowledge Technique: The effects of motivation. Journal of Applied Psychology, 52, 62-65 (1968); E. Elaad, Detection of Guilty Knowledge in Real-Life Criminal Investigations. Journal of Applied Psychology, 75, 521-529 (1990); E. Elaad, A. Ginton & N. Jungman, Detection Measures in Real-Life Criminal Guilty Knowledge Tests. Journal of Applied Psychology, 77, 757-767 (1992); A. Ginton, D. Netzer, E. Elaad & G. Ben-Shakhar, A Method for Evaluating the use of the polygraph in a real-life situation. Journal of Applied Psychology, 67, 131-137 (1982); C. R. Honts, R. L. Hodes, & D. C. Raskin, Effects of Physical Countermeasures on the Physiological Detection of Deception.

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publication of numerous articles in mainstream journals of scientific psychology demonstrates that the community of scientific psychologists generally accepts the methods of the psychophysiological detection of deception.

d. **Publications:** The increasing number of scientific publications on the psychophysiological detection of deception and the involvement of an increasing number of psychological laboratories also evidence the mainstream acceptance of the. Moreover, the journal *Polygraph* is now abstracted and indexed in the Criminal Justice Abstracts, reflecting its acceptance as an authoritative source of scientific information.

e. The National Research Council of the National Academy of Science recently reviewed the scientific research concerning the validity of the polygraph.[34] Although they were critical of the use of non-specific issue polygraphs as a national security screening tool, they reached the following conclusions about specific issue polygraphs used in criminal cases:

> The available evidence indicates that in the context of specific-incident investigations and with inexperienced examinees untrained in countermeasures, polygraph tests as currently used have value in distinguishing truthful from deceptive individuals.
>
> No alternative techniques are available that perform better, . . .

(p. 178)

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Journal of Applied Psychology 70, 177-187 (1985); C. R. Honts, D. C. Raskin, & J. C. Kircher, Mental and Physical Countermeasures Reduce the Accuracy of Polygraph Tests, Journal of Applied Psychology 79, 252-259 (1994); F. S. Horvath, The effect of selected variables on interpretation of polygraph records. Journal of Applied Psychology, 62, 127-136 (1977); J. C. Kircher & D. C. Raskin, Human versus computerized evaluations of polygraph data in a laboratory setting. Journal of Applied Psychology, 73, 291-302 (1988); C. J. Patrick & W. G. Iacono, Validity of the control question polygraph test: The problem of sampling bias. Journal of Applied Psychology, 76, 229-238 (1991); J. A. Podlesny & C. Truslow, Validity of an expanded-issue (Modified General Question) polygraph technique in a simulated distributed-crimes-roles context. Journal of Applied Psychology, 5 (1993).

[34] National Research Council, THE POLYGRAPH AND LIE DETECTION (2003).

POLYGRAPHS AND JURIES

22. The science of Psychology and the Law has addressed the impact of testimony concerning the outcome of polygraph examinations on juries.

23. I am familiar with the scientific literature concerning the impact of polygraph testimony on juries. My former doctoral student Dr. Charles Honts has published a scholarly peer-reviewed work[35] that includes a review of this literature, and he has conducted original scientific research on the topic. The results of his research have been published in a peer-reviewed journal, subjected to the peer review process described above, and have been accepted for presentation at scientific meetings.

a. A number of studies have been conducted on the topic of the impact of polygraph testimony on juries.[36] This research consists of experimental work with mock juries and post-trial interviews with jury members who had been presented with polygraph testimony.

i. This literature consistently shows that juries are not inclined to give undue weight to polygraph evidence. It provides strong evidence that juries are capable of weighing and evaluating all evidence and that they are capable of rendering verdicts that may be inconsistent with polygraph results. In no case did research suggest that polygraph testimony inappropriately affected the jury decision-making process.

ii. The study by Cavoukian and Heslegrave.[37] Is typical of this research. They reported two experiments where cases were presented to mock juries either with or without

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35 C. R. Honts, & M. V. Perry, Polygraph Admissibility: Changes and Challenges, 16 L. & HUMAN BEHAV. 357 (1992).

36 N. J. Brekke, P. J. Enko, G. Clavet, & E. Seelau, The Impact of Nonadversarial Versus Adversarial Expert Testimony, 15 L. & Hum. Behav. 451 (1991). S. C. Carlson, M. S. Passano & J. A. Jannunzzo, The Effect of Lie Detector Evidence on Jury Deliberations: An Empirical Study. 5 J. Police Sci. & Admin. 148 (1977). A. Cavoukian & R. J. Heslegrave, The admissibility of polygraph evidence in court: Some Empirical Findings. 4 L. & Hum. Behav. 117 (1979). A. Markwart & B. E. Lynch, The Effect of Polygraph Evidence on Mock Jury Decision-Making, 7 J. Police Sci. & Admin. 324 (1979); Bryan Meyers & Jack Arbuthnot, Polygraph Testimony and Juror Judgments: A Comparison of the Gulty Knowledge Test and the Control Question Test, 27 J. APPLIED SOCIAL PSYCH. 1421 (1997).

polygraph evidence. The mock jurors were asked to give ratings of their perceptions of the likelihood of the defendant's guilt, and they were asked to render verdicts. In both experiments, in the absence of polygraph evidence, subjects tended to rate the defendant near the middle (uncertain) portion of the guilt scale. This indicates that the evidence was relatively equivocal, the very type of case where polygraph evidence is likely to be offered. The addition of evidence that the defendant had passed a polygraph test shifted subjects' ratings toward not guilty, but the effect was relatively small, shifting the mean rating from approximately 3 to 4 on a 7-point scale in one experiment and from a mean rating of 5 to 6 on a 9-point scale in the other experiment. Polygraph evidence had a significant effect on verdicts in one experiment, but did not have a significant effect on verdicts in a second study. All effects of polygraph testimony were eliminated by the introduction of testimony by an opposing witness who testified that polygraph tests were only 80% accurate and that the results of polygraph tests should be viewed with skepticism. Cavoukian and Heslegrave concluded that concerns about blind acceptance and overwhelming impact of polygraph tests are unjustified.

b. Research conducted at the University of North Dakota by Dr. Honts and his graduate students[38] replicated the findings of the research described in ¶¶ 22.a.i and 22a.ii, *supra*. In the context of a mock trial, they contrasted polygraph testimony with testimony concerning identification based on a blood test. They consistently found that jurors were more skeptical of polygraph testimony than they were of blood test testimony, even when the experts reported them to

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[Footnote continued from previous page]

37 A. Cavoukian & R. J. Heslegrave, The admissibility of polygraph evidence in court: Some Empirical Findings. 4 L. & Hum. Behav. 117 (1979).

38 L. Vondergeest, C. R. Honts, & M. K. Devitt, Effects of Juror and Expert Witness Gender on Jurors' Perceptions of An Expert Witness. MODERN PSYCHOLOGICAL STUDIES, 1 (1993). M. K. Devitt, C. R. Honts, & B. Gillund. Stealing Thunder does not Ameliorate the Effects of the Hired Gun Cross-Examination Tactic. Paper presented at the annual meeting of the American Association for Applied and Preventive Psychology, Chicago (1993). C. R. Honts, M. K. Devitt, & S. Amato, Explanatory Style Predicts Perceptions of Expert Witness Believability. Paper presented at the annual meeting of the American Association of Applied and Preventive Psychology, Chicago (1993). C. R. Honts & M. K. Devitt, The Hired Gun Cross Examination Tactic Reduced Mock Jurors' Perception of Expert Witness' Credibility. Paper presented at the biennial meeting of the American Psychology-Law Society/Division 41 San Diego, CA (1992).

be of the same level of accuracy. There were no indications in any of the studies that polygraph evidence overwhelmed jurors or that they were unable to use and value evidence that was contrary to the polygraph outcome.

24. My personal experience presenting testimony before juries has also indicated that juries are able to discount polygraph evidence in favor of other evidence and render verdicts contrary to the polygraph results.

25. I know of no data, published or unpublished, that support the notion that juries give undue weight to polygraph evidence or that they are unable to evaluate and appropriately weigh polygraph evidence in the context of other evidence introduced at trial.

POLYGRAPHS ARE USED BY THE GOVERNMENT

26. The United States Government is the most frequent user of polygraph tests.[39] Numerous federal agencies use the polygraph to investigate criminal acts and vet employees. Some Federal agencies that use the polygraph include: The Federal Bureau of Investigation, the Secret Service, The Drug Enforcement Agency, all of the Armed Services, the Department of Energy, the Central Intelligence Agency, the National Security Agency, the Defense Intelligence Agency, and the National Reconnaissance Office.

27. Federal uses of the polygraph include criminal investigation, counterintelligence, foreign intelligence, national security screening, and exculpation.

a. The U.S. Department of Defense maintains a training unit, the National Center for Credibility Assessment (NCCA), which conducts and funds a substantial amount of scientific research on the polygraph and sets standards and trains all federal polygraph examiners.

28. In Fiscal Year 2011, the Department of Defense ran 43,434 polygraph examinations (this does not include certain classified programs or the NSA whose polygraph activities are classified). Of these examinations, 41,057 were conducted as a condition of access to highly sensitive positions requiring classification clearance, 1,537 were for criminal investigation, and 840

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39 *Supra* note 33, National Research Council.

were counterintelligence tests. Thus, the Department of Defense places heavy reliance on the ability of the polygraph to detect hostiles who attempt to penetrate our national security system. The NCCA official position is that polygraphs are 90% accurate when properly administered by a competent examiner. The NCCA also teaches a course on how to present polygraph results at trial. In 1997 it was estimated that the Federal government employed approximately 500 polygraph examiners and spent approximately 25 million dollars per year on examiner salaries alone.[40] These numbers have increased dramatically since the establishment of the U.S. Department of Homeland Security.

THE FRIENDLY POLYGRAPH EXAMINER

29. Honts,[41] and Raskin and his colleagues[42] studied the claim that polygraph examinations conducted in confidence for the defense are less valid than non-confidential tests (the "Friendly Polygraph Hypothesis"). The Friendly Polygraph Hypothesis is as follows:

a. The Friendly Polygrapher Hypothesis was developed by Orne,[43] who speculated that a guilty suspect who takes a non-law enforcement polygraph examination on a confidential basis can beat the test because of a lack of fear that an adverse result will be disclosed to the authorities. This speculation was based solely on the results of an unrealistic laboratory study in which college students were given simple card tests, not the standard comparison question test that is typically used in criminal investigation.[44] Orne argued that if the suspect expects only favorable results to be

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40 Gordon H. Barland, Ph.D, Chief, Special Projects, Department of Defense Polygraph Institute, Letter to Public Defender, Neni Odiaga, June 13, 1997.

41 Charles R. Honts, IS IT TIME TO REJECT THE FRIENDLY POLYGRAPH EXAMINER HYPOTHESIS?, paper presented at the annual meeting of the American Psychological Society, Washington, D.C. (May, 1997). Available at: http://truth.idbsu.edu/polygraph/fpeh.html.

42 David C. Raskin, Charles R. Honts, Susan Amato & John C. Kircher, The Case for The Admissibility of The Results of Polygraph Examinations: 1999 Pocket Part to Vol. 1. Of D. L. Faigman, D. Kaye, M. J. Saks, & J. Sanders (eds.) MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY 160 (1999).

43 Martin Orne, *Implications of Laboratory Research for the Detection of Deception*, in LEGAL ADMISSIBILITY OF THE POLYGRAPH 94 (N. Ansley ed. 1975).

44 For a complete description and analysis, *see* David C. Raskin, *The Polygraph in 1986: Scientific, Professional and Legal Issues Surrounding Application and Acceptance of Polygraph Evidence*, 1986 UTAH L. REV. 60 (1986).

reported, the suspect will be more confident, the examiner more supportive, the suspect will have little at stake, and the lack of fear of failure and disclosure will enable a guilty person to pass the test. However, I have shown that the scientific literature provides no support for the friendly examiner hypothesis and generally contradicts it.[45]

b. Laboratory studies where there is little at stake routinely produce detection rates of approximately 90%, ¶¶ 13 *supra*, and laboratory studies using placebos and other procedures designed to make guilty subjects believe they can pass the polygraph test show no reduction in detection rates even for the guilty knowledge test, which is easier to beat.[46]

i. If Orne's hypothesis were correct, one would expect laboratory studies of the CQT to produce relatively more false negative than false positive errors. This is clearly not supported by the data. Honts reviewed 20 laboratory studies of the CQT with a total of 567 guilty subjects and 490 innocent subjects.[47] The false negative rate was 12% and the false positive rate was 16%. This outcome is opposite to the prediction generated by the Friendly Polygraph Hypothesis. Notably, 6 of the 20 laboratory studies reported no errors with guilty subjects, despite a lack of fear of any negative sanctions associated with failing the test.

c. Criminal suspects have no assurance that adverse results will remain confidential since most examiners advise them of their rights and obtain a written waiver prior to the test.[48] The suspects have a great deal at stake because a favorable test may help to obtain a dismissal or acquittal on the charges, and an unfavorable outcome may result in increased legal costs, personal stress, and disruption of their relationship with their defense counsel. These are far greater motivations than the

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45 Id.

46 Howard Timm, *Effect of Altered Outcome Expectancies Stemming from Placebo and Feedback Treatments on the Validity of the Guilty Knowledge Technique*, 67 J. OF APPLIED PSYCHOLOGY 391 (1982).

47 *Supra* note 41.

48 David C. Raskin, *Polygraph Techniques for the Detection of Deception*, in PSYCHOLOGICAL METHODS IN CRIMINAL INVESTIGATION AND EVIDENCE 255 (D. Raskin ed. 1989).

small amount of money guilty subjects have at stake when they routinely fail laboratory polygraph tests.

d. In order to pass a CQT, the guilty suspect must produce stronger physiological reactions to comparison (control) questions than to the relevant questions about the allegations. There is no psychological mechanism or logical argument that explains how a low level of fear or concern about the test outcome can selectively reduce the reactions to the relevant questions and simultaneously enhance the physiological responses to comparison questions to produce a pattern that appears to indicate truthfulness. In fact, fear is not a necessary part of any modern scientific polygraph theory of the comparison question tests.[49] The laboratory data and logical analysis strongly contradict the Friendly Polygraph Hypothesis.

e. There are two published sets of data from tests of criminal suspects that also contradict the Friendly Polygraph Hypothesis.[50]

i. I published a complete data from 12 years of my confidential CQT examinations for defense attorneys and non-confidential tests for law enforcement, courts, and stipulated situations.[51] The results indicated that 58% of suspects who were informed that the results would be provided to the prosecution passed their tests, but only 34% of those who took confidential defense tests passed. In addition, the numerical scores were significantly more negative (in the deceptive direction) for confidential tests compared to more positive scores (in the truthful direction) for non-confidential tests.

ii. Honts recently presented a similar, complete set of data from 14 years of confidential and non-confidential examinations. He reported that 44% of the confidential tests were

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49 *See* discussions in, John A. Podlesny & David C. Raskin, *Physiological Measures and the Detection of Deception*, 84 PSYCHOLOGICAL BULLETIN 783 (1977) and J. Peter Rosenfeld, *Alternative Views of Bashore and Rapp's (1993) Alternatives to Traditional Polygraphy: A Critique*, 117 PSYCHOL. BULLETIN 159 (1995).

50 *Supra* note 41.

51 *Supra* note 44.

passed but 70% of the non-confidential tests were passed. These data are also opposite to the effects predicted by the Friendly Polygraph Hypothesis.

30. The foregoing analysis and these data clearly demonstrate that the Friendly Polygraph Hypothesis fails on all counts. It is illogical, unsupported by laboratory studies, and is contradicted by data from actual field cases.

31. **Without assistance, average people perform poorly in detecting deception**. Although the role of credibility assessment has traditionally been left to juries, scientific research shows that the average person is not effective in detecting deception. A number of reviews converge on the conclusion that without an intimate knowledge of the individual, or instrumental assistance, the average adult, including lawyers, judges, police officers, intelligence officers, and psychologists perform only slightly better than chance at detecting the deception of adults or children.[52]

32. Given the validity data for the polygraph described above, a properly conducted polygraph test may offer valid and helpful information to the trier of fact in the task of assessing credibility in context of a criminal or civil trial.

STANDARDS FOR ADMINISTRATION OF POLYGRAPHS

33. There are standards for the administration of psychophysiological detection of deception tests. New Mexico Rule of Evidence 11-707[53] provides clear standards for tests to be offered as evidence in New Mexico courts of law and has served as a superior model for national standards. National polygraph organizations and polygraph boards in other states have adopted

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52 *See* reviews by: Aldert Vrij, DETECTING LIES AND DECEIT: THE PSYCHOLOGY OF LYING AND IMPLICATIONS FOR PROFESSIONAL PRACTICE (2000); Paul Ekman TELLING LIES (1986); Paul Ekman & Maureen O'Sullivan 46, Who can catch a liar? 913 AMERICAN PSYCHOLOGIST (1991); Bella M. DePaulo, 3 Spotting lies: Can humans learn to do better? 83 (1994); and the recent empirical reports by: Marcus Choi Tye, Susan L. Amato, Charles R. Honts, Mary K. Devitt, & Douglas P. Peters, The Willingness of Children to Lie and the Assessment of Credibility in an Ecologically Relevant Laboratory Setting, 3 APPLIED DEVELOPMENTAL SCIENCE 92 (1999); Paul Ekman, Maureen O'Sullivan & Mark G. Frank, A Few Can Catch a Liar, 10 PSYCHOLOGICAL SCIENCE 263 (1999). Also see the more recent work: Pär Anders Granhag and Leif Strömwall (Eds.) DETECTION OF DECEPTION IN FORENSIC CONTEXTS (2004).

53 New Mexico Rule of Evidence 11-707 (2012).

similar standards. Various agencies of the government, including the FBI and the Department of Defense Polygraph Institute, among many others, maintain and enforce standards based on the same underlying scientific principles and procedures. The American Society of Testing and Materials (ASTM) International promulgates, sets, and maintains a similar international standard for administering psychophysiological detection of deception tests that are used in the context of criminal investigations.[54]

34. **The Polygraph in Comparison to Other Diagnostic Techniques**. Crewson[55] reported a meta-analysis that compared the polygraph with standard diagnostic tests commonly used in Medicine and Psychology. The analysis compares the accuracy of the polygraph with commonly applied and familiar techniques in Psychology and Medicine. One purpose of his study was to review the scientific literature concerning the accuracy and reliability of diagnostic tests in polygraph, medicine, and psychology. Following a computer-based search, 1,158 articles and abstracts were reviewed, 145 were found to be useful, resulting in data on 198 studies. Agreement between evaluators was evaluated with the kappa statistic. Among evaluators in polygraph, medicine, and psychology the obtained kappa coefficient was .77, .56, and .79, respectively. That finding is illustrated below in Figure 3 from the Crewson Executive Summary [CES, p. 26.]. For field diagnostic assessments, the sensitivity of polygraph, medical, and psychological tools was .92, .83, and .72.

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54 American Society of Testing and Materials, Standard Guide for PDD Examination Standards of Practice, ANNUAL BOOK OF STANDARDS, Vol. 14.02 (2000).

55 Philip E. Crewson, A COMPARATIVE ANALYSIS OF POLYGRAPH WITH OTHER SCREENING AND DIAGNOSTIC TOOLS (DoDPI01-R-0003). Department of Defense Polygraph Institute, Fort Jackson, SC 29207-5000. DTIC No. ADA403870.

Averaging a standard measure of agreement across the reviewed literature suggests polygraph and psychology studies report similar levels of agreement. A kappa value of 1.0 represents 100% agreement beyond what would be expected by chance.

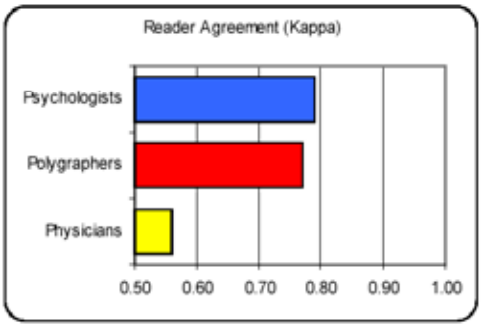

Figure 3. The reliability of polygraph examiners compared to psychologists and physicians. From Crewson (2001).

Specificity of polygraph, medical, and psychological diagnostic testing was .83, .88, and .67, respectively. The overall accuracy of the polygraph in relation to specific diagnoses made by Physicians and Psychologists is illustrated below in Figure 4.

Accuracy by Target Condition

The average diagnostic accuracy for detecting deception with polygraph was similar to diagnosing breast cancer with MRI or ultrasound (US).

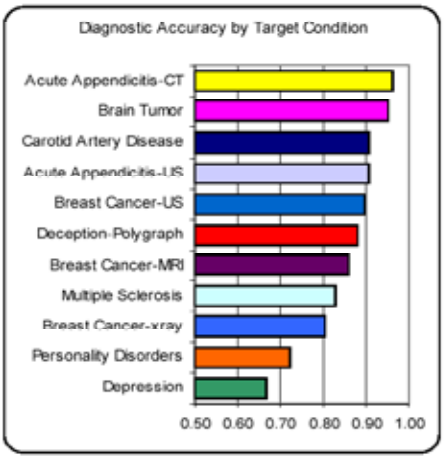

Figure 4. The accuracy of the polygraph in comparison to specific diagnoses made by Physicians and Psychologists. From Crewson

Overall accuracy of the polygraph in relation to the other diagnostic tools is illustrated in Figure 5. Crewson concluded that, "Reports in the literature of polygraph's accuracy and reliability (agreement) on specific issues appear to be consistent with published studies on medical and psychological assessment tools." (p. 2)

Accuracy of Various Diagnostic Tools

The average accuracy reported for 37 diagnostic polygraph studies (specific issue) was similar to MRI (17 studies), CT (19 studies), and ultrasound (38 studies). MMPI had the lowest reported accuracy (17 studies).

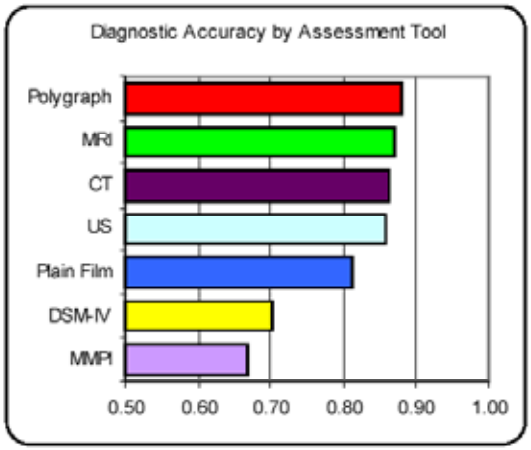

Figure 5. The overall accuracy of the polygraph in relation to commonly used diagnostic tests in Medicine and Psychology. From Crewson (2001).

35. It is my opinion that the above statements represent the current state of the science on polygraph testing.

36. I have reviewed the report and materials from the polygraph examination administered to Jesus Hernando Angulo-Mosquera on November 6, 2014 by retired FBI Special Agent James Orr.

37. In accord with my standard practice in reviewing examinations conducted by other examiners, I evaluated the physiological data before reviewing any of the other materials. My initial examination of the physiological recordings revealed that they were high quality. The standard physiological measures had been taken. Amplitudes of the various recordings were acceptable and clearly within the standards of the profession. The test was a Utah Probable Lie Comparison Question Test with three relevant questions and three comparison questions. The questions were repeated three times. In sum, the physiological recordings were consistent with professional standards and were of sufficient quality to permit a numerical scoring analysis.

38. The following relevant questions were asked, each of which was answered "No":

R1. Did you know the drugs were on that ship before the Coast Guard boarded the ship?

R2. Did you know the drugs were on the Hope II before the Coast Guard boarded the ship?

R3. Did you know the drugs were on that ship before the Coast Guard found them in August?

39. I evaluated the physiological recordings using the scoring system developed and scientifically validated at the University of Utah.[56] The Utah scoring system has consistently been shown to be one of the most accurate of the scorings systems currently available. For the entire set of relevant questions, a combined total numerical score of -6 or lower is indicative of deception, a total numerical score of +6 or greater is indicative of truthfulness, and total numerical scores between -6 and +6 are considered inconclusive.

40. My analysis of the 2014 polygraph examination of Jesus Hernando Angulo-Mosquera produced a total numerical score of +16. This is a definite result that indicates he answered truthfully to the relevant questions listed above.

41. After completing my analysis of the physiological data, I evaluated the November 6, 2014 polygraph materials and report by retired FBI Special Agent James Orr polygraph. As a result of that evaluation, I reached the following conclusions:

a. The critical questions of the examination (the relevant and comparison questions) were proper in structure, content, and form,

b. The questions conform to current standards of practice within the polygraph profession.

c. The questions are representative of the questions used in the polygraph techniques that were the focus of the research described above.

42. In summary, my evaluation of the November 6, 2014 polygraph examination of Jesus Hernando Angulo-Mosquera revealed that the polygraph examination was a Utah Probable Lie Comparison Question Test conducted to the current standards of the polygraph profession. The examination produced physiological data that are consistent with a conclusion that Jesus Hernando Angulo-Mosquera was truthful when he answered the relevant questions listed above.

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[56] Brian G. Bell, David C. Raskin, Charles R. Honts, & John C. Kircher, The Utah Numerical Scoring System, 28 Polygraph 1 (1999).

43. The opinions stated in this Declaration are held to a reasonable degree of scientific certainty.

I declare under the penalty of perjury under the laws of the United States and the State of Arizona that the foregoing is true and correct.

Executed this 16th day of December, 2014 at Green Valley, Arizona.

David C. Raskin, Ph.D.

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Northeast Counterdrug Training Center Polygraph Program
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Tudor Academy
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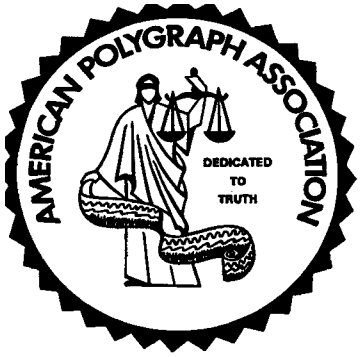
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