



EUROPEAN

# POLYGRAPH

**PUBLISHED QUARTERLY**

Volume 6

2012

Number 1 (19)



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EUROPEAN  
POLYGRAPH

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Volume 6 • 2012 • Number 1 (19)

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## Effectiveness of the Integrated Zone Comparison Technique (IZCT) with Various Scoring Systems in a Mock Crime Experiment by Students

**Key Words:** Integrated Zone Comparison Technique (IZCT), Data Analysis, Horizontal Scoring System (HSS), 3-Point Manual Scoring System, 7-Point Manual Scoring System, Validity, Polygraph Validation Test (PVT)

The IZCT was developed at the Academy for Scientific Investigative Training in 1987. It is currently used in the fields of law enforcement, intelligence, and private security in numerous countries around the world. It is a modification of the Backster Zone Comparison Technique format, in a structure that

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closely resembles the zone technique validated at the University of Utah. It is a flexible technique format, allowing it to be used for Single-issue, Multi-faceted and Multi-issue investigations.

IZCT format is a 13-question test consisting of two weak relevant questions (sacrifice relevant, countermeasure indicator), three flexible relevant questions, three probable lie comparison questions consisting of both exclusive and inclusive types, one symptomatic question, and four irrelevant questions:

1. Irrelevant: Is today Sunday? (No)
2. Symptomatic: Do you understand I will only ask the questions I reviewed?
3. Weak Relevant: (Sacrifice) Do you intend to lie to any test question?
4. Irrelevant: Is today (actual day)? (Yes)
5. Exclusive Comparison: During the first (-2) years of your life, .....?
6. Flexible Relevant: Primary or secondary relevant question, depending on case facts
7. Irrelevant: Right now are you in the (actual country)? (Yes)
8. Inclusive Comparison: In your entire life did you ever .....?
9. Flexible Relevant: Primary or secondary relevant question, depending on case facts
10. Irrelevant: Right now are you in (false country)? (No)
11. Comparison: Exclusive or Inclusive
12. Flexible Relevant: Primary or secondary relevant question, depending on type case facts
13. Weak Relevant: (Countermeasure Question) Have you deliberately done anything to try and beat this test?

The examinee is first informed of his/her rights concerning the polygraph and a consent form is signed. The examiner then asks a series of background questions and establishes rapport by finding common areas of interest with the examinee. The examiner ensures that the examinee is mentally and physically capable of taking the examination. In specific examinations the Forensic Assessment Interview Technique (FAINT) is then utilized.

Following the interview the examinee is then asked what he or she did to prepare to take the polygraph examination, what internet sites he or she used

to research the test, and whether he or she was aware that to take a polygraph examination it requires his or her total cooperation.

The examiner then states, "Would you agree that if you were going to be truthful with me today you would want to cooperate fully? Would you agree that the only person who deliberately would not cooperate would be someone who was going to lie to me? Therefore, do you agree that if you deliberately do not cooperate my opinion should be that you were not truthful?" The examinee is then asked to sign an "Agreement of Cooperation" form, in which he or she agrees to the above.

The examinee is then asked if he or she was aware that not everyone is capable of taking a polygraph examination. That a small percentage of the population cannot be tested because when they lie there is nothing that happens in their body that the computerized polygraph system can identify as deception. "So you will be taking three tests today. The first test will be to ensure you are capable of being tested, that when you lie the polygraph can tell you are lying, and just as importantly, when you tell the truth the polygraph can tell you are being truthful. The second test involves the reason you are here. Then, prior to analyzing any of the data, a third test will be administered to give us insight, if you do have a problem in the second test, into why it may have occurred."

The examiner then conducts a "known" demonstration/acquaintance test and advises the examinee that this is to ensure that when the examinee lies, the computerized system can identify it properly, and just as importantly, that when the examinee tells the truth the computerized system can identify that.

The 13 questions in the IZCT structure are then carefully reviewed and discussed with the examinee in the following order: (1, 4, 7, 10), (6, 9, 12), (5, 8, 11), 13, 3 and 2.

After this question review, the questions are saved and the examiner begins recording a chart as he or she asks the examinee which question or questions the examinee perceives as being most important. The examiner then explains that a polygraph test is different than an academic test. In an academic test scoring a 98 is excellent. In a polygraph test answering 98% of the questions truthfully will result in a failure. The polygraph test is more like a pregnancy test. In that test you are either pregnant or you are not. You cannot be a little

bit pregnant. In a polygraph test you are either answering all of the questions truthfully, or you are lying. You cannot be a little bit truthful. This will add to the saliency of the Comparison Questions for the innocent examinee. The examiner then explains how the polygraph works. At the conclusion of this explanation the chart collected is saved as an anti-countermeasure chart, which establishes the “normal” breathing patterns for the examinee.

The first IZCT chart is collected as a Silent Answer Test (SAT), which is cognitively stimulated by instructing the examinee that during the test he or she is to remain silent and listen to the questions carefully to make sure he or she is comfortable with them, understands them, and most importantly, does not remember anything he or she has not told the examiner about, as this will be his or her last opportunity to make changes in questions before verbal answers are recorded. The SAT questions are asked in the following sequence: 1, 2, 3, 4, C5, R6, C8, R9, C11, R12, 13. Irrelevant questions 7 and 10 are not used, unless they are needed to re-establish a norm during the examination, or used due to an artifact committed by the examinee during the examination.

The sequence for the second chart is: 10, 2, C5, R12, C8, R6, C11, R9, 3 (“Did you lie to any test question?”), 13. To focus the examinee on his or her zone of threat, when the examiner begins this chart the examinee is instructed to make sure he or she answers each question truthfully, since the charts will be numerically evaluated, and lying to any question in the test, no matter what it is about, could cause them to fail the entire examination.

The third IZCT chart is administered with the relevant questions being asked before the comparison questions and the relevant questions being rotated in the same manner. The sequence is: 1, 2, 3, R9, C5, R12, C8, R6, C11, 13.

If the need appears for additional data to be collected to reach a clear decision, or if there seem to be deliberate distortions, Chart 4 of the IZCT is used, where all of the questions, 1 through 13, are asked.

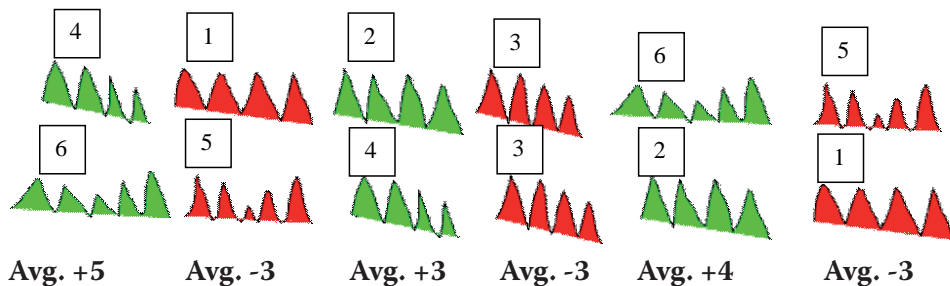
In the 3-point and 7-point system each relevant question will be compared with the comparison question that precedes it. This allows for each relevant question (RQ) to be asked paired with each comparison question (CQ) once after three charts are administered. Using the 3-point system each parameter in each RQ will be scored +1 if the reaction in the CQ being used for scoring is greater, 0 if there is no difference, and -1 if the reaction in the RQ is greater.



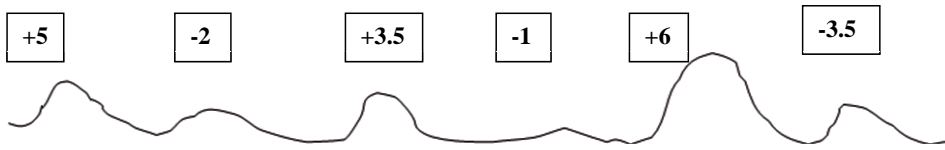
Using the 7-point system a 0 is given for no difference between the reaction in the CQ and RQ, + or - 1 for a slight difference, + or - 2 for a clear difference, and + or -3 for a extremely great reaction versus a lack of reaction, if upgrading rules (involving proper timing, clean charts, no artifacts, etc.) are met. In both systems decisions of truthfulness were made when total examination scores were +6 or higher, and deception when -6 or lower.

In the Horizontal Scoring System all four physiological channels of each relevant and comparison question are ranked horizontally from greatest to least, based on their significance in the chart. If the question format utilizes three comparison and three relevant questions, the most significant reaction in each channel is given a "6", and the least significant reaction is given a "1". If only 2 comparison and 2 relevant questions are used the channels are ranked from "4" to "1".

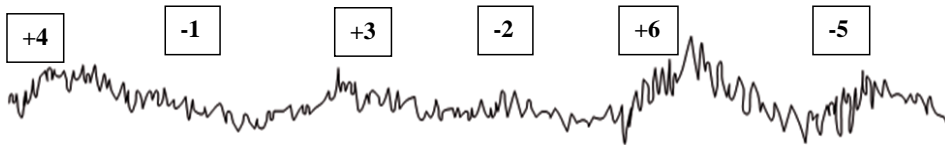
The below diagram shows Thoracic and Abdominal channels ranked horizontally from 6 to 1. Each question's abdominal and thoracic score is then averaged to ensure that the pneumo tracings only account for 1/3 of the question's total score. Comparison question scores receive a positive numerical value and relevant question scores receive a negative value.



The electrodermal responses are ranked horizontally from 6 to 1. In case questions are equal in significance in any parameter they are given the average of the rank positions they are competing for. In the electrodermal example below comparison question 8 and relevant question 12 are about equal. They are competing for the ranks of 4 and 3. Each question is given the average of those ranks, 3.5.



The cardio responses are ranked horizontally from 6 to 1.



C5	R6	C8	R9	C11	R12
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The average rank score for each question’s pneumo channel can then be combined with the question’s electrodermal and cardio ranks for a total question score. In the above example we have the following scores:

Average Pneumo					
+5	-3	+3	-3	+4	-3
EDA					
+5	-2	+3.5	-1	+6	-3.5
Cardio					
+4	-1	+3	-2	+5	-5
Total Question Scores					
<b>C5</b>	<b>R6</b>	<b>C8</b>	<b>R9</b>	<b>C11</b>	<b>R12</b>
+14	-6	+9.5	-6	+15	-11.5
<b>SPOT SCORE: +8 (14-6)</b>			<b>+3.5 (9.5-6)</b>		<b>+3.5 (15-11.5)</b>
<b>SINGLE ISSUE CHART SCORE: +15 (Combination of all Spot Scores)</b>					

In the first two charts the rank of the relevant question is subtracted from that of the comparison preceding it. In the third chart we compare each relevant question with the comparison question that follows it.

The cut-offs using the Horizontal Scoring System (HSS) in this study were established in an earlier study of HSS used with Federal Zone Comparison cases, which indicated that accuracy for single-issue tests, where three charts of data are collected consisting of three relevant and three comparison questions in each chart, would be highest when decisions of truth were made for examinations with a total score of -1 or higher, and deception when total examination scores were -13 or lower.

## Method

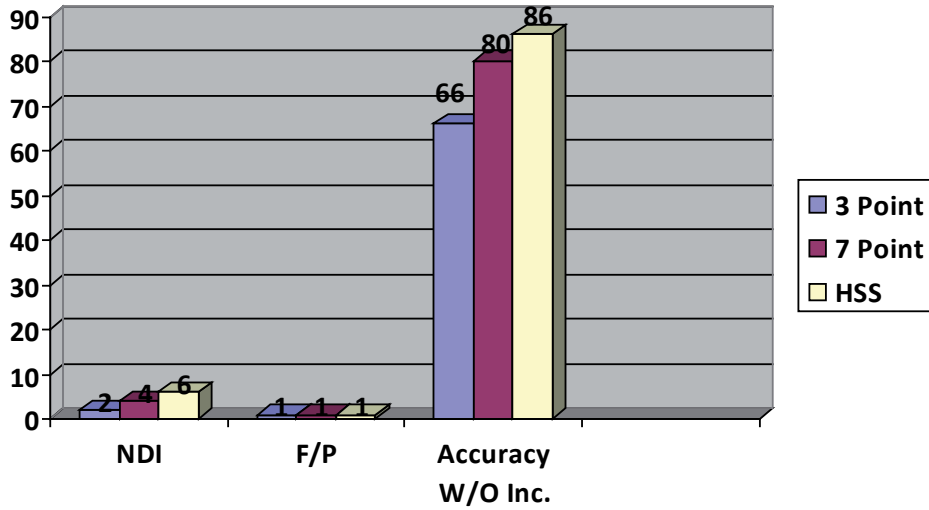
All examinees were volunteers from the South African Air Force. All examiners were students in their 7<sup>th</sup> and 8<sup>th</sup> weeks of basic polygraph course training. Sixteen examinations were administered. Half of the examinations (8) consisted of examinees that had been instructed to commit a theft, and half of the examinees (8) had no involvement or knowledge in the thefts. All of the examinees were instructed to maintain they had not committed a theft, and all were promised a financial reward if they had truthful results. Therefore, as in real life, both truthful and deceptive examinees were given rewards for coming out truthful.

The student examiners did not know whether they were testing truthful or deceptive examinees, or how many truthful or deceptive examinees there were. All examinations were administered as "single-issue" IZCT tests. The Limestone Computerized System was used in eight (8) of the examinations, and the Lafayette LX-4000 Computerized System in the other eight (8) examinations. Thoracic and abdominal respiration, electrodermal activity, cardiovascular changes, and movement were recorded in all examinations. The data of all of the examinees were then analyzed by the student examiner using the 3-point, 7-point, and Horizontal Scoring Systems.

## Results

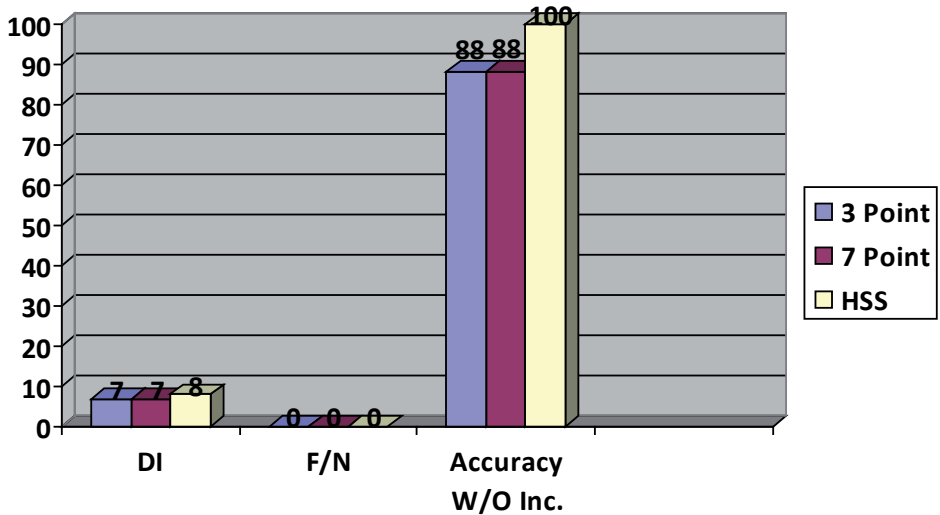
### IZCT

TRUTHFUL	EXAMINEES			
	NDI	False	Positive	Inconclusive
3-Point	2	1	5	66%/25%
7-Point	4	1	3	80%/50%
HSS		6	1	86%/75%
				(Inc. Rate 62%)
				(Inc. Rate 38%)
			1	(Inc. Rate 12%)

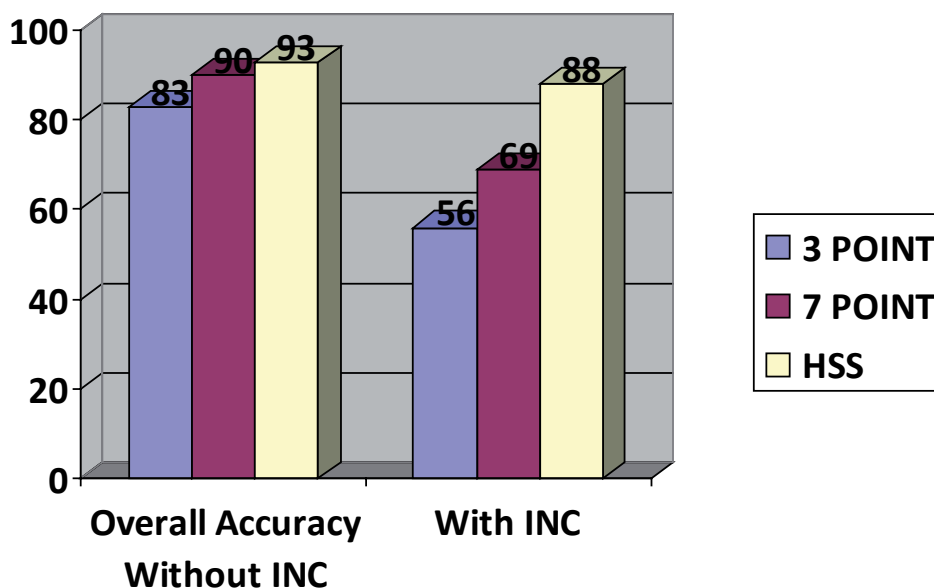


Deceptive examines

	DI False/Negative		Inconclusive Accuracy Without/With Inconclusive	
3-Point	7	0	1	100%/88%
7-Point	7	0	1	100%/88%
HSS	8	0	0	100%/100%



The overall accuracy of the 3-Point System was 83% without Inconclusives and 56% with Inconclusives counted as errors. The overall accuracy of the 7-Point System was 90% without Inconclusives and 69% with Inconclusives counted as errors. The overall accuracy of the HSS was 93% without Inconclusives and 88% with Inconclusives counted as errors.



### Polygraph Validation Test (PVT)

After three charts of IZCT data were collected the examinees were informed they were about to take the third examination (PVT). The PVT was introduced in 2003 by the authors, and recently researched by Tuvia Shurany. The method was introduced to identify possible false positive results, verify deceptive results, and in the latter case assist in breaking a deceptive examinee's objections. The PVT is administered as a Peak Of Tension Test, or more correctly, a Guilty Knowledge Test, providing the examinee different possible reasons for why he or she may have had problems with the IZCT test, while monitoring which of the reasons he or she is focusing on.

Examinees were instructed to answer each of the following questions, "No," and a single chart of data was collected:

If you had problems in your test today was it because:

1. You were tired?
2. You were afraid I would ask a question I didn't review?
3. You did not understand all of the test questions?
- C4. You lied I response to a question about theft unrelated to today?
- R5. You lied about your thefts today?
- C6. The test results were incorrect?
7. You did not believe the polygraph worked?
8. You were nervous?

Data was scored using the HSS where rankings were made in each parameter of C4, R5 and C6, with the greatest reaction in each parameter receiving 3 and the smallest 1. The question with the highest total score was considered to be most salient to the examinee, and a subsequent decision made by the examiner.

#### **TRUTHFUL EXAMINEES**

<b>NDI</b>	<b>FALSE/POSITIVE</b>	<b>INCONCLUSIVE</b>
7	0	1

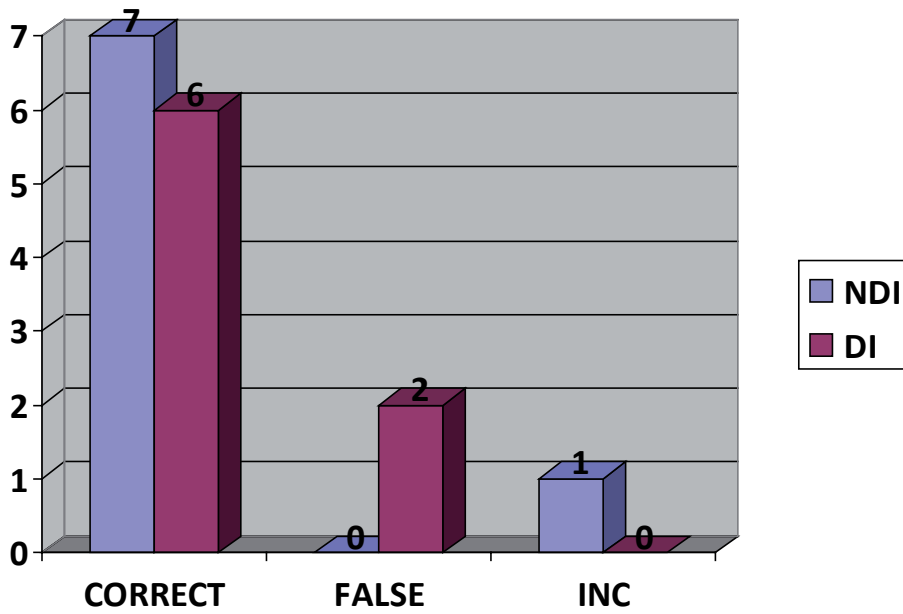
Accuracy for the PVT for truthful examinees was 100% without Inconclusives and 88% when Inconclusive results were considered as errors.

#### **DECEPTIVE EXAMINEES**

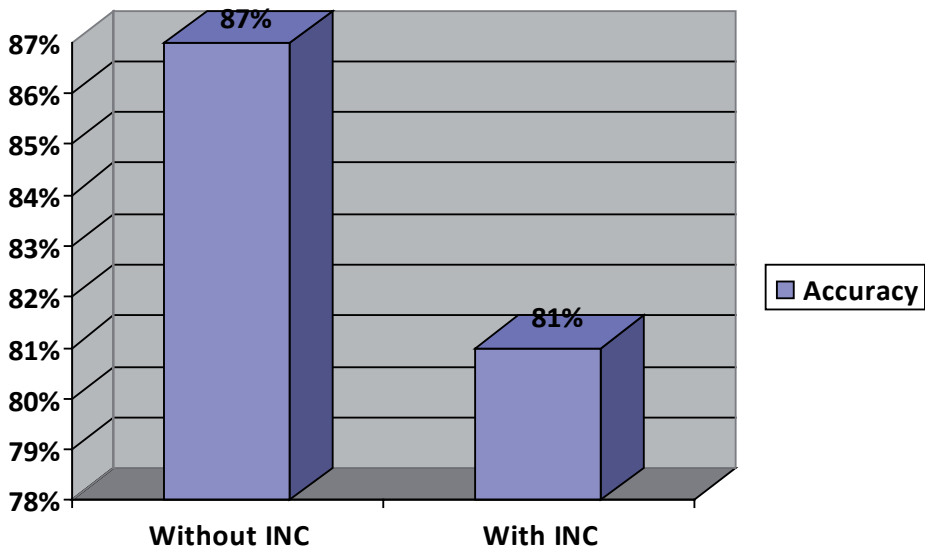
<b>DI</b>	<b>FALSE NEGATIVE</b>	<b>INCONCLUSIVE</b>
6	2	0

Accuracy for the PVT for deceptive examinees was 75%. There were no Inconclusive decisions.

Overall accuracy for the PVT was 87% when Inconclusives were not considered and 81% when they were considered as errors.



Overall accuracy for the PVT was 87% when Inconclusives were not considered and 81% when they were considered as errors.



It should be noted that the PVT, like the Direct Lie Comparison Test and Positive Control, invites countermeasures which could result in False/Negative decisions by inexperienced examiners.

## Conclusion

In studies of the accuracy of any technique and system for analyzing polygraph data there is always the question of the competence of those involved in the study and the ability to generalize their results to the larger body of field examiners who may not be as competent as those involved in the study. In this study of the IZCT with various scoring systems, students were used to conduct the entire examination from start to finish. The students were totally blind as to the truthfulness of the examinees or how many of the examinees were actually truthful or deceptive.

The results indicate that the IZCT with both the 7-point scoring system and HSS meet the requirements of 90% accuracy or above required for "evidentiary testing," and the 3-point scoring system meets the requirements of 80% accuracy or above required for "investigative testing," when inconclusive results are not considered.

The HSS had a .06% inconclusive rate. The 3-point scoring system had a 38% inconclusive rate, and the 7-point system had a 25% inconclusive rate. Both the 3 and 7-point system failed to meet the standard set by the American Polygraph Association of no more than a 20% inconclusive rate. In addition, a single chart of data was collected from each examinee using the PVT. Overall accuracy for the PVT was 87% when Inconclusives were not considered and 81% when they were considered as errors.

Previous studies of the IZCT by experienced examiners showed dramatically lower rates of Inconclusives when using the 3-point scoring system. This difference may have been caused by the subjectivity involved in the selection of a numerical value to be used in a comparison of CQ and RQ for inexperienced examiners in contrast to their lack of experience. The HSS appears to have eliminated this problem, since it employs a much more objective way of analyzing and comparing data.



## References

- T. Shurany. *Polygraph Verification Test*. European Journal, Volume 5, Number 2 (16), 2011.
- T. Shurany, F. Chaves. *The Integrated Zone Comparison Technique and ASIT PolySuite Algorithm: A Field Validity Study*. European Journal, Volume 4, Number 2 (12), 2010.
- D. Krapohl, N. Gordon and C. Lombardi. *Accuracy Demonstration of the Horizontal Scoring System using Field Cases Conducted with the Federal Zone Comparison Technique*. Polygraph 2008, Volume 37, Number 4.
- N. Gordon, F. Mohammed, S. Farro, et al. *Integrated Zone Comparison Polygraph Technique Accuracy with Scoring Algorithms*. Physiology and Behavior, 87, 2006.
- N. Gordon, W. Fleisher, et al. *A Field Study of the Integrated Zone Comparison Technique*. Polygraph 2000, Volume 29, Number 3.
- N. Gordon, W. Fleisher. *Academy for Scientific Investigative Training's Horizontal Scoring System and Examiner's Algorithm for Chart Interpretation*. Polygraph, Volume 28, Number 1, 1999.
- N. Gordon, P. Cochetti. *The Horizontal Scoring System*. Polygraph, Volume 16, Number 2, 1987.





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## Critique of Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques

**Key Words:** accuracy of validated polygraph techniques, validity and utility of polygraph examination, techniques of polygraph examination

A Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques was conducted by an Ad-Hoc committee at the direction of the Board of Directors of the American Polygraph Association to review and analyze the status of the scientific literature on psychophysiological veracity examinations using the polygraph and evidence in the form of published research supporting the various polygraph techniques. The final 113-page report was published in *Polygraph*, Journal of the American Polygraph Association, Volume 40, Issue 4, 2011. This Meta-Analytic Survey was chaired by Michael Gougler with Raymond Nelson as Principal Investigator and Donald Krapohl, Mark Handler, Pam Shaw, and Leonard Bierman as committee members.

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A critical review and analysis of the aforesaid Meta-Analytic Survey by this author revealed numerous errors and omissions that necessitated a critique be written and published to correct the record and inform recipients of the Meta-Analytic Survey of those inaccuracies.

This critique is divided in three parts. Part I describes noted errors and omissions. Part II describes noted inaccuracies in a PowerPoint presentation of the Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques made by an Ad-Hoc Committee member at the Israeli Polygraph Examiner Association seminar on 26-28 January 2012. Part III contains a discussion and evaluation of the Committee's report pertaining to the Matte Quadri-Track Zone Comparison Technique (MQTZCT) and the Integrated Zone Comparison Technique (IZCT) identified by the Committee as *proprietary* event-specific diagnostic techniques.

The APA Committee's report listed seven polygraph techniques that met the Committee's requirement for acceptance as "Evidentiary" techniques on the basis of published and replicated research that showed these techniques had a minimum 90% criterion accuracy with an inconclusive rate not exceeding 20%. These polygraph techniques are listed below in order of their criterion accuracy and inconclusive rate.

**Matte Quadri-Track Zone Comparison Technique (MQTZCT)**

Correct Decisions = .994, Inconclusives = .029

**Integrated Zone Comparison Technique (IZCT)**

Correct Decisions = .994, Inconclusives = .033

**Utah Zone Comparison Technique, Canadian Police College, RCMP (U-ZCT CPC)**

Correct Decisions = .939, Inconclusives = .185

**Utah Zone Comparison Technique – Probable Lie Test**

Correct Decisions = .931, Inconclusives = .077

**Event Specific Zone Comparison Technique (Empirical Scoring System)**

Correct Decisions = .921, Inconclusives = .098

**Federal You-Phase (Empirical Scoring System)**

Correct Decisions = .904, Inconclusives = .192

### **Utah Zone Comparison Technique – Directed Lie Test**

Correct Decisions = .902, Inconclusives = .073

The APA Committee declared that the Matte Quadri-Track ZCT and the Integrated ZCT were “Outliers” from the other validated techniques due to their exceptional accuracy but instead of recognizing the elements responsible for their accuracy; the Committee faulted the validity studies that supported them as evidenced in Part I of this critique with rectifying comments.

The Matte Quadri-Track Zone Comparison Technique was validated by three field research studies: Matte & Reuss 1989; Mangan, Armitage, Adams 2008; Shurany, Stein, Brand 2009.

The Integrated Zone Comparison Technique was validated by one laboratory and two field research studies: Gordon, Mohamed, Faro, Platek, Ahmad, Williams, 2005; Shurany & Chaves 2010; Shurany 2011, respectively.

### Part I

The following inaccuracies were noted on the following pages of the final report on Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques prepared for the American Polygraph Association by the Ad-Hoc Committee on Validated Techniques.

#### **Page 240 of the Meta-Analytic Survey, third footnote states**

A correlation coefficient of .990 is an extraordinary and remarkable finding in any field of research, and suggests an extremely low rate of disagreement between the numerical scores of blind evaluators using the MQTZCT. This statistic cannot be found in the Matte and Reuss (1989) dissertation paper for the now defunct Columbia Pacific University, but was published in the included Matte and Reuss (1989) reprint in *Polygraph*. Despite this extremely high correlation of numerical scores from different scorers, developers and researchers of the MQTZCT have expressed repeated cautions regarding the lack of generalizability of MQTZCT results without intensive proprietary training.

#### Comment

The second sentence commencing with “This statistic” referring to the correlation coefficient of .990 (blind evaluation of polygraph charts) was in fact

published in the Matte Reuss 1989 dissertation on page 3 in the Table of Contents and on pages 46-47 and Table 11 on pages 99-100. Furthermore, the score sheets from Mangan and Armitage (Mangan et al 2008a) in their blind scoring of 30 cases each that resulted in one error in 60 cases blind scored for a correlation coefficient of .983 was provided to the Committee, yet no mention of this is made in this report. (See Appendix E-12). In addition, the “intensive proprietary training” claimed by the Committee consists of only one day’s training to insure that polygraphists who administer the MQTZCT are thoroughly knowledgeable about the protocol of the technique. The American Polygraph Association (APA, 2009) requires all of its members, who must have completed a minimum of 200 polygraph examinations, attend and successfully complete a minimum of 40 hours of specialized classroom instruction and pass a written examination before they can administer a post-conviction sex offender test. Accordingly, a one day training session can hardly be regarded as “intensive.”

### **Pages 199, 200 of the Meta-Analytic Survey**

The Committee report states that “Two PDD techniques produced accuracy rates that were *outliers*<sup>1</sup> from and inconsistent with the distribution of results from all other techniques. They were the Integrated Zone Comparison Technique (IZCT) and the Matte Quadri-Track Zone Comparison Technique (MQTZCT). While it is within the realm of possibility that these two techniques are superior to other techniques, studies supporting them proved to have more unresolved methodological issues than others included in this meta-analysis.”

### Comment

The MQTZCT contains an Inside-Track composed of a Fear-of-Error Control Question and a Hope-of-Error Relevant Question for comparison and quantification whose scores are added to the scores acquired from the two previous tracks each containing a control versus a direct relevant question dealing with the same issue. The Inside-Track is *unique* to the MQTZCT and addresses the *Fear of Error* by the innocent, also coined by Dr. Paul Ekman as the Othello Error, an issue mentioned in the National Academies of Science 2003 report. (Matte 2011).

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<sup>1</sup> Outliers are numbers in the data set that are extremely high or extremely low, compared to the rest of the data. **The mean may not be a fair representation of the data, because the average is easily influenced by outliers of very large or very small values in the data set that are not typical.**

In the Matte-Reuss1989 field study, the Inside-Track reduced the Inconclusives for the Truthful from 52% to 9% and prevented 5% false positives. The Inside-Track further reduced the Inconclusives for the Deceptive from 17% to 3% and prevented 2% false negatives. The Fear of Error increased the total scores for the Truthful from +341 to +762 thus increasing the score by +421 points. The Fear of Error Control Question generated an adjustment to the 58 Innocent case scores by increasing the score an average of +7.3 per case. The average total score per Innocent case without the fear of error adjustment was +5.89 and with the Fear of Error adjustment was +13.1. This shows that the *Fear of Error* factor is extremely significant and cannot be ignored in the scoring of Innocent cases. It also increased the average score per case for the Guilty from -19.7 to -25.1. Overall accuracy 100% with 6% Inconclusives.

In the Mangan et al 2008 field study, the Inside-Track reduced the Inconclusives for the Truthful from 32% to Zero, and the Deceptive from 12.3% to 2.2%. The Fear of Error increased the scores for the Truthful from a mean of +4.0 per chart to +7.1 and the Deceptive from a mean of -6.9 per chart to -10.0. Overall accuracy 100% with 2.2% Inconclusives.

In the Shurany et al 2009 field study, the Inside-Track reduced the Inconclusives for the Truthful from 31% to Zero and the Deceptive from 71% to Zero. The Fear of Error increased the total score for the Truthful from a mean +3.39 per chart to +5.39 per chart, and the Deceptive from -3.54 per chart to -6.08 per chart. Overall accuracy 96.5% with Zero Inconclusives.

It can be seen from the above data that the significant increase in the scores for both the Truthful and Deceptive is due to the effectiveness of the Inside-Track containing the Fear-of-Error Control Question and the Hope-of-Error Relevant Question. This should explain the reason for the significantly higher scores compared to the other techniques (excluding the IZCT), and thus labeled an "Outlier" by the Committee. An additional benefit of the Inside-Track is that it confirms the legitimacy of reactions to the direct relevant questions in the other two tracks that often raises the issue of false positives. Details regarding the role of the Inside-Track and its benefits can be found in "Psychological Aspects of the Quadri-Track Zone Comparison Technique and Attendant Benefits of its Inside Track" published in *European Polygraph*, 5(2)(16), 2011 which was excluded from the Committee's Report. The IZCT Version 2 incorporated the Inside-Track's Fear and Hope of Error questions in its format.

**Page 236, Footnote #3 states**

Generalizability of this outlier result is limited by the fact that the developers and investigators have advised the necessity of intensive training available only from experienced practitioners of the technique, and have suggested that the complexity of the technique exceeds that which other professionals can learn from the published resources. The developer reported a near-perfect correlation coefficient of .99 for the numerical scores, suggesting an unprecedented high rate of inter-scorer agreement, which is unexpected given the purported complexity of the method. Additionally, the data initially provided to the committee for replication studies included only those cases for which the scorers arrived at the correct decision, excluding scores from those cases for which the scorers did not achieve the correct decision. Missing scores were later provided to the committee for both the Mangan et al (2008) and Shurani and Chavez (2009) studies. However, the resulting sampling means were different from those reported for both replication studies. Because of these discrepancies, the statistical analysis was not re-calculated with the missing scores, and the reported analysis reflects the sampling distribution means as reported. Sampling means for replication studies should be considered devoid of error or uncontrolled variance.

**Comment**

The underlined portion by this author reflects a gross inaccuracy inasmuch as the Matte-Reuss(1989) field study and the Mangan, Armitage, Adams (2008a) field study reported 100 percent accuracy, with no errors to report. The raw data for the two inconclusives (Mangan 2008a) which do not reflect correct or incorrect decisions of truth of deception and do not affect the data of conclusive results were subsequently provided to the APA committee upon request. It is expected that the sampling means of the two inconclusives would be different from the conclusive cases. Furthermore the Committee cited the wrong study in that Chavez was not one of the authors of the 2009 field study on the MQTZCT. The correct citation and spelling of the principal author is Shurany, Stein and Brand (2009). In addition, there were no inconclusives reported in the Shurany, Stein and Brand 2009 field study. The raw data for the two errors in the Shurany et 2009 study were included in the completed study data provided by Shurany to Chief Investigator Nelson. Nelson had previously acquired incomplete data of the study from Barry Cushman who released it without authorization from Shurany.

Moreover, this author (Matte) merely requires one day's training (unless an interpreter-translator is needed) to insure that the examiner understands the psychological aspects of the MQTZCT, the standardized pretest interview



unique to the MQTZCT and the technique's protocol and chart interpretation rules. This author has conducted numerous quality control reviews during the past 40 years as an active polygraphist and has noted a disturbing number of polygraph tests that failed to meet acceptable standards of practice. This short training assures that the MQTZCT will be administered in accordance with its protocol resulting in the high accuracy reflected by the field research that supports this robust technique when properly administered. To fault a technique because it requires additional training is ludicrous.

**Page 249. Last paragraph states in part**

Although one-way differences were not significant within the deceptive or truthful groups, the significant Interaction effect indicates that the scores of criterion deceptive and criterion truthful cases are expressed or interpreted in different ways within the sampling distributions of the three included studies on the MQTZCT. In other words, the data are not congruent even among the studies used to support the MQTZCT. This significant interaction suggests the possibility that the included studies are based on samples that are not representative of each other. It is unknown whether one or more of the studies is not representative of the population of all examinees, reducing our confidence in the potential for generalizability of the reported results.

Comment

The Shurany, Stein, Brand (2009) field study was conducted in Thailand consisting of 42 Thais, 4 Israelis, 4 Chinese, 2 Columbians, 1 American, 1 Vietnamese, 1 Burmese, 1 from the United Kingdom and 1 Australian. This information was provided in the published study.

**Page 250, Second paragraph states in part**

A final confound to the generalizability of the results of the included studies on the MQTZCT is that the data provided to the committee initially included numerical scores for only those cases for which the scorers achieved the correct result. Data available to the ad-hoc committee did not initially include numerical scores for those cases for which the scorers achieved erroneous or inconclusive results. Missing scores were later provided to the committee for both the Mangan, Armitage and Adams (2008) and Shurani, Stein and Brand (2009) studies.

Comment

The above statement is a repetition of the statement made on Page 236, also erroneously citing the Shurani and Chavez 2009 study which actually pertains to the Integrated Zone Comparison Technique.

**Page 254, Last 3 lines of paragraph titled “Ancillary Analysis” which states** “and two studies on the MQTZCT (Shurani, Stein & Brand, 2009; Shurani 2011).

#### Comment

Shurany is misspelled. Should read “Shurany.” Shurani 2011 pertains to the Integrated Zone Comparison Technique, not the MQTZCT.

Tuvia Shurany’s family name was misspelled (Shurani) forty-one (41) times in the committee’s report including the three research studies’ citations listed in the References section of the report. These three cited Shurany et al studies, which were used by the APA committee including its data to assess the validity of the ITZCT and the MQTZCT, correctly spelled Shurany’s name, yet the committee for unknown reasons continuously misspelled his family name.

#### **Page 211, Second paragraph**

This paragraph cites published research that supports the lack of significant differences in classification accuracy of field and laboratory polygraph research.

#### Comment

The APA report failed to cite a study published in *European Polygraph*, Volume 4, 2010, Number 4(14) by Matte entitled “Guiding Principles and Benchmarks for the Conduct of Validity Studies of Psychophysiological Veracity Examinations Using the Polygraph” that challenges the value of laboratory versus field studies in generalizing its results to real-life situations.

#### **Page 210, Footnote #16 states in part**

Confirmation based on confession alone would exclude inconclusive and error cases, and would tend to inflate accuracy calculations. Judicial outcomes as a criterion and are also not independent if polygraph evidence was considered during the judicial proceedings, and could lead to inflated accuracy estimates. One included study (Mangan, Armitage&Adams, 2008) did not meet this requirement, and was based only on sample cases that were confirmed by confession. Not surprisingly, the study resulted in a reported 100% accuracy rate. Verschuere, Meijer, &Merckelbach (2008) argued the results of this study as a methodological artifact and therefore unreliable.

## Comment

The report failed to cite a “Rebuttal to Objections by Iacono and Verschuere et al” by Mangan, Armitage and Adams published in *Physiology & Behavior*, 95 (2008) 29-31 which persuasively refutes their objections. Further discussion regarding the value of confessions in establishing ground truth can be found in “Guiding Principles and Benchmarks for the Conduct of Validity Studies of Psychophysiological Veracity Examinations Using the Polygraph” *European Polygraph*, Vol. 4, 2010, Number 4(14). also available for review at [www.mattepolygraph.com](http://www.mattepolygraph.com).

### **Page 253. Footnote #54 which states**

A possible example of this phenomenon can be seen in Mangan et al., (2008) who reported the results of a survey of the confession-confirmed test results of one experienced examiner. The reported results were 100% accurate, a finding in accord with what would be expected to arise from a confession based selection bias.

## Comment

A review of the field study by Mangan et al, on the MQTZCT published in *Physiology & Behavior* (2008a) failed to reflect the “survey” of confession-confirmed test results of 100% stated in Footnote #54 in the Committee report. However, Mangan et al’s Rebuttal to Objections by Iacono and Verschuere et al, also published in *Physiology & Behavior* (2008b) which reported the results of a research study by Gary D. Light and John R. Schwartz (1999) entitled “The Relative Utility of the Forensic Disciplines” revealed that the United States Army Criminal Investigations (CID) Command conducted a study in 1990 involving a total of 1069 forensic examinations consisting of firearms, illicit drugs, latent prints, questioned documents serology, trace evidence, photographic, and the polygraph. The study’s report stated that “Of the 1069 examinations reviewed, there were no instances in which the findings of one discipline contradicted the results of any other discipline.” The report further stated that “The findings of this comparison support other studies that utilized the confession as ground truth (Barland and Raskin, 1976; Patrick & Iacono, 1988).” “This assertion is further substantiated by a study conducted by Mason (1991) wherein PDD examinations were conducted in which ground truth was ascertained by urinalysis examinations. The validity of PDD (verified by these biomedical tests) was in excess of 95% and if utilizing confessions in conjunction with the urinalysis forensic discipline accuracy of that confession subset would be over 98%.”

**Page 228, Footnote #40 states**

This statistic was published in the Matte and Reuss (1989) reprint of the dissertation published in the journal *Polygraph*, but cannot be located in the original dissertations study for the no longer extant Columbia Pacific University.

## Comment

University Microfilm International (UMI), Ann Arbor, Michigan statutorily copyrighted the dissertation with the Copyright Office of the Library of Congress. An official copyright notice reflecting UMI as the publisher was provided to the principal Investigator of the Ad-Hoc committee with the notice that both the official copyright document and the entire dissertation in PDF format was published and available at [www.mattepolygraph](http://www.mattepolygraph) for review and download and the original dissertation was on file at the Library of Congress. This information providing access to the dissertation was not reflected in the Committee's report. Furthermore, as indicated in this critique's Comment on Page 240, the "statistic" that the committee couldn't find in the dissertation is in fact in the Table of Contents on page 3, and on pages 46-47 and Table 11, pages 99-100 of the dissertation.

**Page 284, Appendix E-12**

The table fails to reflect reliability correlation for the Mangan, Armitage and Adams 2008 field study.

## Comment

The 60 score sheets from the Mangan, Armitage and Adams field study (2008a) in the blind scoring of 30 field cases by Mangan and Adams which was classified by Mangan et al as a *reliability* rather than a validity study, resulted in one error in 60 cases blind scored for a correlation coefficient of .983 was provided to the Committee, yet no mention of this is made in their report (see Appendix E-12). The fact that 10 of those confirmed cases were randomly selected from 2007 cases because there were insufficient number of confirmed cases in 2006, should make no difference inasmuch as those cases were all confirmed and their results unknown to the blind reviewers. See also Comment on Page 240, Third Footnote.

**Page 290, Appendix F**

Reflects Matte SGK.

## Comment

Should reflect SKG for *Suspicion-Knowledge-Guilt* Test. (Matte 1996).

### **Page 293, Appendix G**

The paragraph which starts with Matte (1990), discusses the history of Matte's doctoral dissertation and publication by UMI subsequently known as Proquest Information & Learning.

## Comment

However, it fails to direct the reader to a source from which the reader can gain access and review the 220-page dissertation, to wit: [www.mattepolygraph.com](http://www.mattepolygraph.com) under Research & Publications which can be reviewed and downloaded free of charge. The source could also have been inserted into the citation in the References section.

### **Pages 268 & 208**

References section of report lists Tuvia Shurany's Polygraph Verification Test published in *European Polygraph*, Vol. 5, Nr. 2(16) 2011.

The report also states on Page 208 that "although hypotheses are abundant, scientific studies have been unable to show evidence of construct validity for the array of technical questions with the exception of one. The CQ is generally capable of producing larger reactions from truthful persons than RQ."

## Comment

The Committee report failed to list this author's (Matte) study "Psychological Aspects of the Quadri-Track Zone Comparison Technique and Attendant Benefits of its Inside Track" published as the lead article in the same issue of *European Polygraph*, Vol. 5, Nr.2(16), 2011 that published the Shurany study. Yet the *Psychological Aspects* study fully explains the role of each component of the MQTZCT including its Inside Track and addresses issues raised in a presentation on The Evidence for Technical Questions in Polygraph Techniques by Barry Cushman and Donald Krapohl (the latter a member of the APA Committee) at the September 2010 annual polygraph seminar by the American Polygraph association at Myrtle Beach S.C., and in the APA Committee's report on page 208.

### **Pages 215, 225, 226**

Reflects the MQTZCT (Matte) and the IZCT (Gordon) as "proprietary event-specific diagnostic techniques" yet describes the Backster ZCT as an event-specific diagnostic technique (not proprietary).

### Comment

Gordon and Backster both developed their technique and teach it at their respective polygraph school. Hence there is an obvious inconsistency in the description of polygraph techniques.

### **Page 227, Figure 11**

Reflects the mean truthful scores of MQTZCT at 3.099 for the Matte-Reuss 1989 Study.

### Comment

The above figure is incorrect. The mean chart score for the Innocent Armitage cases was +5.7 and Matte cases was +6.1 for an overall mean truthful score for the MQTZCT of +5.9 which is reflected on Page 32 of the Matte 1989 Dissertation and also on Page 193 of the Matte-Reuss field study published in *Polygraph*, Vol. 18, Nr. 4, 1989. This brings the mean score for the Matte-Reuss study in line with the mean truthful scores of the Shurany et al and the Mangan et al studies reflecting +5.3 and +7.1 respectively.

### **Pages 196, 200, 255**

The Committee's report is replete with comments about the "proprietary" nature of the MQTZCT and the IZCT labeling the published research that validates them as "advocacy" research stating that "both of these techniques are supported by studies authored by the developers and proprietors, and for which the developer/proprietor functioned as both principal investigator and study participant. From a scientific perspective, even well designed research generated by advocates of a method who have a vested interest in the outcome, and who act as participants and authors of the study report does not have the compelling power of research not so encumbered by these factors."

### Comment

First of all, the MQTZCT developed by this author was originally validated in a doctoral dissertation for Columbia Pacific University (CPU) with Dr. Ronald M. Reuss, Professor of Biology at the State University College at Buffalo, New York (SUCBNY) and mentor-faculty advisor for CPU. Dr. Reuss had complete access to all of the raw data which had to be fed into his computer under his supervision because the IBM compatible statistical software provided by Dr. William C. Shefler, Professor of Biology at SUCBNY was not compatible with this author's Digital Rainbow CPM operating system. The late Dr. Reuss was a highly respected professor and author of several research studies

published in various peer-reviewed journals and an Anatomy and Physiology Lab Manual published in 1973 with a Second Edition in 1979. In 1985 he co-authored a Lab Manual and Study Guide in Anatomy and Physiology. He also conducted research on muscle physiology at Rensselaer Polytechnic Institute and the State University of New York Medical School, and radiation physics and radiation biology at the University of New Mexico, co-sponsored by the Atomic Energy Commission. Dr. Reuss was a Lifetime member of the National Science Teachers Association. He was known as a no-nonsense scientist whose honesty was beyond question.

The second field study of the MQTZCT was conducted by Daniel Mangan, Thomas Armitage, and Gregory Adams (2008a) and published in *Physiology & Behavior*, the official peer-reviewed journal of the International Behavioral Neuroscience Society. Mangan and Adams are graduates of the Backster School of Lie Detection and Armitage is a graduate of the New York School of Lie Detection which taught the Backster Zone Comparison Technique exclusively. Adams is the Chief Instructor at the Backster School of Lie Detection and uses the Backster ZCT exclusively, hence has no proprietary or financial interest in the MQTZCT. Mangan and Armitage have the choice of using the Backster ZCT or the MQTZCT without any restriction or opposition from their employers and clients, hence realize no financial gain or proprietary interest in the MQTZCT or in the outcome of the study.

The third field study of the MQTZCT was conducted by Tuvia Shurany, Einat Stein, and Eytan Brand, and published in 2009 in *European Polygraph*, the official peer-review journal of Andrzej Frycz Modrzewski Krakow University, Poland. Tuvia Shurany is the former Director of the Israeli Government Polygraph School and as such taught the Utah ZCT, the Peak-of-Tension (POT) and the Relevant-Irrelevant Technique. Since his retirement from the Israeli Government, Shurany has been using the Backster ZCT, the IZCT and the MQTZCT, hence has no financial or proprietary interest in any of those techniques which he uses as needed. Dr. Einat Stein, Professor of Psychology at Bar Ilan University, Israel, is not a polygraphist but is a published researcher in the field of psychology. Dr. Stein was provided all of the data for statistical analysis, evaluation and reporting in the field study published in *European Polygraph*. Dr. Stein had no financial or proprietary interest in the outcome of the study. Eytan Brand of the Israeli Security Agency was also taught the Utah ZCT, POT and the R&I technique and has no proprietary or financial interest in the outcome of the study on the MQTZCT.



This author has never met or corresponded with Dr. Einat Stein, nor had this author ever met Eytan Brand until September 2011 at the APA seminar in Texas, two years after publication of their study published in *European Polygraph*.

It is most difficult to understand how the Committee came to the conclusion that the Mangan et al and the Shurany et al field studies were proprietary in nature and its researchers had a financial interest in the studies' outcome. Furthermore, the original study by this author (1989) under the direct supervision of Dr. Ronald M. Reuss assisted by Dr. William Shefler underwent rigorous scrutiny that assured the integrity of the research study. This author finds the Committee's statements that question the integrity of the the research studies validating the MQTZCT and the honesty of its researchers degrading and without merit, especially when we consider the same but unreported vulnerability of other research studies supporting validated polygraph techniques.

For instance, the research (Barland & Raskin 1976; Rovner 1986; Honts, Hodes, Raskin 1985; Honts, Raskin, Kircher 1987; Horowitz Kircher, Honts, Raskin 1997), mostly laboratory studies, validating the Utah Zone Comparison Technique, was developed by David Raskin, Chair of the Psychology Department at the University of Utah where all of the aforementioned researchers acquired their doctorates. It could be argued that each one of the aforementioned researchers had a vested interest in the outcome of their research with its developer as a co-author or dissertation reviewer. Furthermore, each of these researchers subsequently administered polygraph tests using the Utah ZCT and testified in court commanding high fees for their service, which could have been foreseen when they conducted their research.

Furthermore, the integrity of the research conducted by Raymond Nelson, Chief Investigator of the APA Committee could also be questioned due to the fact that Nelson is an employee of the Lafayette Instrument Company which competes with other manufacturers of polygraph instruments in the sale of their polygraph instruments to government agencies and in particular the National Center for Credibility Assessment (NCCA) which provides polygraph training to all of the Federal agencies that use the polygraph. In addition, Donald Krapohl, Special Assistant to the Director of NCCA and Editor-in-Chief of *Polygraph*, Journal of the APA is also a member of the APA Committee. In connecting the dots, it could be argued that research



conducted by Nelson to validate techniques such as the Air Force MGQT, the Federal You-Phase and the Federal ZCT were influenced by the financial interests of his employer who pays his salary.

However, this author would also contend that the aforesaid arguments that would label the research validating the Utah ZCT and aforementioned Government techniques as *advocacy research* are as *absurd* as the Committee's labeling of the MQTZCT and the IZCT research as *advocacy research*. There is absolutely no evidence to support the Committee's position or the arguments posited herein regarding the proprietary and financial interests of the research used to validate the polygraph techniques cited in the Committee's report.

It should be noted that Nathan Gordon, the developer of the Integrated Zone Comparison Technique (IZCT) validated by Gordon et al 2005; Shurany, Chaves 2010; Shurany et al 2011 is most capable in defending the published research that validated his highly accurate technique, hence the IZCT is not the focus of this critique which is already very extensive.

**Page 196, Executive Summary states in Part**

“Validation, which, as it applies to PDD exams, is stipulated by the APA Standards of Practice (Section 3.2.10) to refer to the combination of: 1) a test question format that conforms to valid principles for target selection, question construction, and in-test presentation of the test stimuli, and 2) a validated method for test data analysis as it applies to a specified test question format. Although many factors may affect the overall effectiveness of PDD examinations, these two parts are recognized as fundamental to the criterion accuracy of PDD examinations.”

**Comment**

Yet the Committee accepted studies that used blind scoring of confirmed polygraph charts as validity studies rather than reliability studies presumably because they were chosen at random. Even Patrick Iacono(2008) a critic of the control question test recognized the difference in his review of the Mangan et al (2008a) study, stating “Mangan et al. also had blinded judges re-score a subset of 30 of the original examiners polygraph charts. This step appears to uncouple the connection between the confession criterion and the test outcome because the blind re-scorer did not obtain the confession. However, because polygraph chart scoring shows high inter-scorer reliability (reliabilities close to 90 are typical), it should be no surprise that the blindly

rescored charts will also match the criterion. Moreover, since the charts examined by the blind scorer are only ones where the original examiner was correct, the blind scorer is also denied access to charts that could involve errors. Hence, the analysis of blindly scored charts was correctly identified by Mangan et al, as an exercise to determine ‘reliability of chart interpretation.’ This blind re-scoring analysis contributes little to our understanding of polygraph validity.”

Blind scoring of charts from confirmed examinations establishes repeatability of the results, hence reliability. However the blind scorers are not involved in the target selection, question formulation which includes effective comparison (control) questions and their introduction, and the pretest interview that prepares the subject psychologically for the collection of the physiological data. It fails to detect any procedural violations committed by the polygraphist during the pretest interview or during the collection of the physiological data that could have an adverse psychological impact affecting the physiological data that is used for a determination of truth or deception.

A scientifically accepted method of validating a polygraph technique is set forth in “Guiding Principles and Benchmarks for the Conduct of Validity Studies in Psychophysiological Veracity Examinations Using the Polygraph” published in *European Polygraph*, Volume 4, 2010, Number 4(14), also available for review in [www.mattepolygraph.com](http://www.mattepolygraph.com).

The above mentioned “Guiding Principles...” study was not cited in the Committee’s report, probably because its contents challenge the usefulness of laboratory studies in validating control question tests (but support its use in validating recognition (Concealed information) Tests and further challenges the results of a laboratory study by Pollina, D.A., Dollins, A. B., Senter, S. M., Krapohl., D. J., Ryan, A. H. (2004) which held laboratory studies as a viable alternative to field studies.

### **Pages 265, 266**

The Monte Carlo method of calculating the criterion accuracy of polygraph techniques was used to validate the Federal You-Phase test, the Backster ZCT, the Air Force Modified General Question Test (MGQT), and the Directed-Lie Screening Test/Test for Espionage and Sabotage.

### **Comment**

The Monte Carlo model is useful in research to provide answers to complex problems that are difficult to solve through other methods. However, the use

of the Monte Carlo method of calculating the criterion accuracy of polygraph techniques suffers from some of the same flaws or weaknesses inherent in the blind scoring of charts in that they both fail to meet all of the requirements set forth in the Guiding Principles and Benchmarks for the Conduct of Validity Studies in Psychophysiological Veracity Examinations (Matte 2010a).

### Pages 267-268 – Selected References

- Shurani, T. (2011). Polygraph Verification Test. *European Polygraph*, 16.
- Abrams, S. (1977). A polygraph handbook for attorneys. Lexington, MA: Lexington Books.
- Abrams, S. (1989). A complete polygraph handbook. Lexington, MA: Lexington Books.
- Raskin, D. C. Honts, C.R. (2002). Handbook of polygraph testing. In M. Kleiner (Ed.), Handbook of Polygraph Testing. San Diego: Academic Press.
- Reid, J. E. & Inbau, F. E. (1977). *Truth and deception: The polygraph ('lie detector') technique* (2nd ed). Baltimore, MD: Williams & Wilkins.

### Comment

In the above References, the APA report cited the above study by Shurani (correct spelling “Shurany”) published in Volume 5, 2011, Number 2(16), *European Polygraph*, as the second study in that particular issue. The first study in that same EP issue by Matte titled “Psychological Aspects of the Quadri-Track Zone Comparison Technique and Attendant Benefits of its Inside Track” should also have been listed in the References because it addresses the issue of technical questions (P. 208).

The textbooks by Reid and Inbau (1977), Abrams (1977 & 1989), Raskin&Honts (2002), were listed in the References but the textbook by Matte titled “The Art and Science of the Polygraph Technique” published in 1980 by Charles C. Thomas, Publisher was omitted from the References.

Furthermore, the textbook by Matte (1996) titled “Forensic Psychophysiology Using The Polygraph: Scientific Truth Verification – Lie Detection” was originally written under contract with Charles C. Thomas, Publisher who would not permit the textbook to exceed 400 pages due to marketing considerations and subsequently released Matte at his request from their contract to pursue publication without page limitations. Matte published the 800-page textbook and after publication provided a copy to Thomas who stated in an email (Thomas, 2002) that he wished he had published the textbook which he would keep as a reference textbook and looked forward to further

associations with this author. Hence, this textbook may have been technically self-published but it was in fact started under contract with an established publisher who subsequently approved its content with high praise. This textbook was cited by the United States Supreme Court in *United States v. Edward G. Scheffer*, 523 U.S. 303 (1998), and received outstanding reviews: In *Polygraph*, Journal of the APA by Norman Ansley (1997), Editor, who stated that "This major work by Matte exceeds in scope and depth every previous work on the detection of deception. As a textbook it covers every topic in the curriculum of APA accredited school except ethics. As a textbook for polygraph courses the book is excellent. Attorneys will find it a necessity." In *The Champion*, National Association of Criminal Defense Lawyers, Law Professor Edward J. Imwinkelried (1998) stated that "the text belongs on the shelf of any defense attorney who contemplates waging a polygraph war." It is the most widely distributed textbook on polygraph in the world, yet was not listed in the Committee's References presumably because it was technically self-published.

Also, omitted from the Committee's References was a textbook by Tuvia Shurany and Israel Ravid (2004) entitled "Evaluation of Polygraph Charts: Formats, Criteria and Scoring" published by T.I Publications: Israel, which received outstanding reviews, most notably by Jerzy Konieczny (2011) of the Editorial Board of *European Polygraph*, Journal of Andrzej Frycz Modrzewski Krakow University who stated that "The Authors filled in the gap that is present in virtually all polygraph manuals that devote relatively little space to the evaluation of polygraph charts."

It is recognized that only those publications used in the text are normally cited in the References. However, those textbooks listed above which were omitted from the References most certainly contained at least as much information related to the subject of the Committee's review than other textbooks that were listed. Hence the question arises as to the reason they were omitted from the References, and in particular the Matte (1980) textbook published by Charles C. Thomas which was the first textbook describing the Quadri-Track ZCT then known as the Quadri-Zone ZCT.

## Part II

A PowerPoint presentation of the Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques by a member of the APA Ad-Hoc

Committee, was made at the Israeli Polygraph Examiner Association seminar in Israel during period 26-28 January 2012. The following errors were noted:

**Slide Number 50, states**

Complete numerical scores were not provided for two of the three included studies: Scores were not provided for those cases that were not scored correctly.

Comment

The above statement is inaccurate inasmuch as the Matte-Reuss (1989) field study and the Mangan, Armitage, Adams (2008a) field study reported a 100 percent accuracy, with no errors to report. The raw data for the two inconclusives (Mangan 2008a) which do not reflect correct or incorrect decisions of truth of deception and do not affect the data of conclusive results were provided to the APA committee upon request. This leaves only the Shurany 2009 field study and its primary author provided the Committee with the complete data upon request. An incomplete draft of the study had been previously provided by Shurany to Barry Cushman with the understanding that it was an incomplete draft, which was subsequently given to Committee member Nelson without Shurany's knowledge.

**Slide Number 62, states**

MQTZCT

Mangan, Armitage & Adams (2008)

N = 136

Comment

Should read N=140.

See Page 21, *Physiology & Behavior*, Volume 95 (2008) 17-23.

**Slide Number 63, reflects**

The mean truthful scores of MQTZCT at +3.099 for the Matte-Reuss 1989 Study.

Comment

The above figure is incorrect. The mean chart score for the Innocent Armitage cases was +5.7 and Matte cases was +6.1 for an overall mean truthful score for the MQTZCT of +5.9 which is reflected on Page 32 of the Matte 1989

Dissertation and also on Page 193 of the Matte-Reuss field study published in *Polygraph*, Vol. 18, Nr. 4, 1989. This brings the mean truthful score for the Matte-Reuss study in line with the mean truthful scores of the Shurany et al and the Mangan et al studies reflecting +5.3 and +7.1 respectively. This same diagram reflecting the erroneous mean truthful score for the MQTZCT is on page 227 as Figure 11 in the Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques.

### Part III

#### Discussion

The failure of the APA Committee to find the blind study showing a correlation coefficient of .990 in Matte's 1989 doctoral dissertation though published as a reprint in *Polygraph*, Journal of the APA, is difficult to comprehend in view of its listing in the dissertation's Table of Contents on page 3 and full discussion on pages 46-47 and in Table 11 on pages 99-100.

The Committee's report highlights missing data from the Mangan et al and Shurany et al field studies when in fact the only missing data from the former study were the scores from the two inconclusives which were submitted upon request. The score sheets of the 30 cases blind scored (reliability study) by Mangan and Adams were provided unsolicited to the Committee. Reference the Shurany et al study, the missing data consisted of the scores for the two errors which were submitted upon request. However, the Committee's report made no mention nor did it highlight the fact that the U.S. Government refused to provide the data of its studies on the Directed Lie Screening Test and the Air Force MGQT to the APA Committee. Nevertheless, the Committee included those studies in their report. Furthermore, two studies on the Utah ZCT conducted by Honts, Raskin and Kircher (1987), and Honts and Raskin (1988) "reported mean scores but were not required by editorial and publication standards to report standard deviations for the sampling distributions of deceptive and truthful and deceptive scores at the time of publication. Because data were no longer available to calculate these missing statistics, a blunt estimate of the pooled standard deviation was calculated from the reported F-ratio for the level of significance of the difference between truthful and deceptive scores." (Footnotes 43 & 44 of Committee Report).

The fact that the U.S. Government refused to provide the data for the DLST and AFMGQT studies, and the fact that the Honts, et al 1987 and

the Honts&Raskin 1988 studies were included in the report in spite of the aforesaid missing data (Nelson 2011, Feb 11) was not mentioned in the PowerPoint presentation of the Meta-Analytic Survey. Nevertheless slide #62 of the PowerPoint presentation pertaining to the Matte Quadri-Track ZCT reflected that “Data for 2008 and 2009 studies did not include numerical scores for cases not scored correctly.” The above statement is incorrect and suggests a most selective reporting of information.

The Committee’s report tends to make sweeping statements that are not supported by the facts and data as indicated in Part I of this critique. The report goes to great lengths in emphasizing the *proprietary* nature of the Matte Quadri-Track Zone Comparison Technique (MQTZCT) and the Integrated Zone Comparison Technique (IZCT) but fails to provide evidence to support that assertion. The report also places great emphasis on the “intensive proprietary training” required for the administration of the MQTZCT which is a gross exaggeration inasmuch as only one day of training is required to insure that the polygraphist is knowledgeable about the psychological structure, format and protocol of the MQTZCT which is not an excessive requirement considering the importance of its ensuing results and serious effect on the lives of examinees. Not mentioned is the APA requirement for its members who are graduates of APA accredited polygraph schools, many with extensive experience, to attend a minimum 40-hours of specialized classroom instruction and successful completion of a written examination before they can administer post-conviction sex offender tests. (APA 2009).

The Committee’s report omits the blind scoring of 30 cases in the Mangan et al field study showing the reliability of the MQTZCT but provides no adequate and satisfactory explanation. Furthermore, the exclusion of several studies that support various essential components of the MQTZCT and its validity-reliability and/or contradict studies listed in the Committee’s report raises serious questions about the Committee’s objectivity. The omission of Mangan et al’s “Rebuttal to Objections by Iacono and Verschuere et al” published in *Physiology & Behavior* (2008), and this author’s “Guiding Principles and Benchmarks for the Conduct of Validity Studies in Psychophysiological Veracity Examinations Using the Polygraph” published in *European Polygraph* (2010) regarding the use of confessions as ground truth are particularly significant omissions that begs an adequate explanation. The latter omitted study further presents significant challenges to the use of laboratory studies to validate polygraph techniques, and sets forth guidelines for the conduct of validity studies using field cases.



The omission of this author's study "Psychological Aspects of the Quadri-Track Zone Comparison Technique and Attendant Benefits of its Inside Track" published as the lead article in *European Polygraph*, Vol 5, Nr. 2(16), 2011, which addresses and explains the various 'technical questions' discredited by B. Cushman and D. Krapohl in their presentation at the APA annual seminar in 2010 is of particular concern inasmuch as the validity of technical questions was discussed in the Committee's report. Yet, the APA Committee cited in its References Tuvia Shurany's study, "Polygraph Verification Test" in that same issue of *European Polygraph*, which indicates the Committee's awareness of this author's study.

It is with great hesitation that this author brought forth this most unpleasant task of exposing the cited errors, omissions and apparent bias against research conducted in the private sector which has historically produced most of the original and creative work that generated the polygraph techniques in current use throughout the world.

There appears to be a lack of interest by NCCA<sup>2</sup> in polygraph techniques developed in the private sector such as the MQTZCT and the IZCT which is unfortunate because most inventions are created in the private sector by individuals who are not hamstrung by government regulations and academic rules that restrain and limit the freedom of thought so essential to the creation of new ideas in technology that undoubtedly threaten the status quo. Hopefully, researchers in Europe, Asia as well as North and South America will develop an interest in conducting field validity studies on the MQTZCT and the IZCT using the Guiding Principles and Benchmarks for the Conduct of Validity Studies published in *European Polygraph*. (Matte 2010a).

## References

Abrams, S. (1977). *A Polygraph Handbook for Attorneys*. Lexington, MA: Lexington Books.

Abrams, S. (1989). *The Complete Polygraph Handbook*. Lexington, MA: Lexington Books.

American Polygraph Association (2009, March 31. By-Laws, Division III, *APA Standards of Practice*, Section 3.11.2, 3.11.3, 3.11.4.

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<sup>2</sup> NCAA provides polygraph training to all Federal agencies that use the polygraph.



- Ansley, N. (1997). Book Review: Forensic Psychophysiology Using the Polygraph: Scientific Truth Verification – Lie Detection. *Polygraph*, 27(2), 65–68.
- Backster, C. (2009, September 15). Statement to J. A. Matte by electronic mail.
- Backster, C. (2011, October 15). Sworn Declaration executed in San Diego, CA.
- Barland, G. H., Raskin, D.C. (1976). Validity and Reliability of Polygraph Examinations of Criminal Suspects. (Report No. 76 – Contract No. 75-NI-99-0001. Washington, DC: National Institute of Justice.
- Cushman, B. (2009, August 19). Cushman reply to D. Mangan by electronic mail.
- Cushman B., Krapohl, D. (2010, September). The Evidence for Technical Questions in Polygraph Techniques. A Presentation to the American Polygraph Association, Myrtle Beach. S.C.
- Gordon, N. J., Fleisher, W. L., Morsie, H., Habib, W., Salah, K. (2000). A field validity study of the Integrated Zone Comparison Technique. *Polygraph*, 29(3), 220–225.
- Gordon, J. J., Mohamed, F. B., Faro, S. H., Platek, S. M., Ahmad, H., Williams, J. M. (2005). Integrated Zone Comparison Polygraph Technique accuracy with scoring algorithms. *Physiology & Behavior*, 87(2), 251–254.
- Gougler, M., Nelson, R., Handler, M., Krapohl, D., Shaw, P., Bierman, L. (2011). Meta-Analytic Survey of Criterion Accuracy of Validated Polygraph Techniques. *Polygraph*, 40(4), 194–305.
- Honts, C. R., Hodes, R. I., Raskin, D. C. (1985). Effects of physical countermeasures on the physiological detection of deception. *Journal of Applied Psychology*, 70(1), 177–187.
- Honts, C. R., Raskin, D. C. Kircher, J. C. (1987). Effects of physical countermeasures and their electromyographic detection during polygraph tests for deception. *Psychophysiology*, 1(3), 241–247.
- Horowitz, S.W., Kircher, J. C., Honts, C. R., Raskin, D. C. (1997). The role of comparison questions in physiological detection of deception. *Psychophysiology*, 34(1), 108–115.

Iacono, W.G. (2008). Accuracy of Polygraph Techniques: Problems Using Confessions to Determine Ground truth. *Physiology & Behavior*, 95(1–2), 24–26.

Imwinkelried, E. J., (1998, April). Book Review: Forensic Psychophysiology Using the Polygraph. *The Champion*, National Association of Criminal Defense Lawyers. Vol. XXII, No. 3, 44–46.

Kircher, J. C., Raskin, D. C. (1988). Human versus computerized evaluations of polygraph data in a laboratory setting. *Journal of Applied Psychology*, 73(2), 291–302.

Konieczny, J. (2011). Book Review: T. Shurany, I. Ravid. Evaluation of Polygraph Charts: Formats, Criteria and Scoring. T.I. Pulications 2004, 150 pp.

Krapohl, D. (2008, October 2). Review of Matte-Reuss manuscript by D. Polina for APA Journal, Electronic mail attachment.

Krapohl, D. ((2009, March 3), Review of Matte-Reuss manuscript by D. Polina for APA Journal, Electronic Mail attachment.

Light, G. D., Schwartz, J.R. (1999). The Relative Utility of the Forensic Disciplines. *Polygraph*, 28(3), 240–258.

Mangan, D. J., Armitage, T. E., Adams, G.C. (2008a). A Field Study on the Validity of the Quadri-Track Zone Comparison Technique. *Physiology & Behavior*, 95 (1–2), 17–23.

Mangan, D. J., Armitage, T. E., Adams, G. C. (2008b). Rebuttal to Objections by Iacono and Verschuere et al. *Physiology & Behavior*, 95 (1–2), 29–31.

Mason, P. (1991). *Association Between Positive Urinalysis Drug Tests and Exculpatory Examinations*. Unpublished doctoral dissertation. United States Army Criminal Investigation Command, Baltimore, MD.

Matte, J. A. (1996). *Forensic Psychophysiology Using The Polygraph: Scientific Truth Verification – Lie Detection*. Williamsville, New York: J.A.M. Publications.

Matte, J. A. (1978). Polygraph Quadri-Zone Comparison Technique. *Polygraph*, 7(4), 266–280.

Matte, J. A. (1980). *The Art and Science of the Polygraph Technique*. Springfield, Illinois: Charles C. Thomas, Publisher.

Matte, J. A., Reuss, R. M. (1989). A Field Validation Study of the Quadri-Zone Comparison Technique. *Polygraph*, 18(4), 187–202.

Matte, J. A. (1989). *Validation Study on the Quadri-Zone Comparison Technique*. Research Abstract LD 01452, Vol. 1902, Ann Arbor, Michigan: University Microfilm International.

Matte, J. A. (2010a). Guiding Principles and Benchmarks for the Conduct of Validity Studies of Psychophysiological Veracity Examinations Using the Polygraph. *European Polygraph*, 4–4(14), 173–198.

Matte, J. A. (2010b). A field study of the Backster Zone Comparison Technique's Either Or Rule and scoring system versus two other scoring systems when relevant question elicits strong response. *European Polygraph*, 4, 2(12), 53–69.

Matte, J. A. (2011). Psychological Aspects of the Quadri-Track Zone Comparison Technique and Attendant Benefits of its Inside-Track. *European Polygraph*, 5–3(17)

Mohamed, F. B., Faro, S. H., Gordon, J. JH., Platek, S. M., Ahmad, H., Williams, J. M. (2006). Brain mapping of deception and truth telling about an ecologically valid situation: Functional MR imaging and polygraph investigation – Initial experience. *Radiology*, 238, 679–688.

National Research Council. (2003). *The Polygraph and Lie Detection*. Washington, DC: Committee to Review the Scientific Evidence on the Polygraph. Division of Behavioral and Social Sciences and Education, National Academies Press.

Nelson, R. (2011, Nov 8). Meta-Analytic Survey Report. Referencing UMI Dissertation. Electronic mail to J. A. Matte.

Nelson, R. (2011, Feb 10). Meta-Analytic Survey Report. Reference recalculation of scores from studies validating polygraph techniques. Electronic mail to J. A. Matte.

Nelson, R. (2011, Feb 11). Meta-Analytic Survey Report. Reference methods of data analysis. Electronic mail to J. A. Matte.

Office of Technology Assessment. (1983, November). *Scientific Validity of Polygraph Testing – A Research Review and Evaluation*, Washington, D.C.

Pollina, D. A., Dollins, A. B., Senter, S. M., Krapohl, D. J., Ryan, A. H. (2004). Comparison of Polygraph Data Obtained from Individuals Involved in Mock Crimes and Actual Criminal Investigations. *Journal of Applied Psychology*, 89(6), 1099–1105.

Raskin, D. C., Hare, R. D. (1978). Psychopathy and detection of deception in prison in a prison population. *Psychophysiology*, 15, 126–136.

Raskin, D. C., Honts, C. R. (2002). *Handbook of Polygraph Testing*. In M. Kleiner (Ed.), *Handbook of Polygraph Testing*. San Diego, CA: Academic Press.

Reid, J. E. & Inbau, F. E. (1977). *Truth and Deception: The Polygraph (Lie Detector) Technique (2<sup>nd</sup> ed)*. Baltimore, MD: Williams & Wilkins.

Rovner, L. I. (1986). The accuracy of Physiological Detection of Deception for subjects with prior knowledge. *Polygraph*, 15(1), 1–39.

Shurany, T. (2011). Polygraph Verification Test. *European Polygraph*, 5–2(16), 61–70.

Shurany, T., Ravid, I. (2004). Evaluation of Polygraph Charts: Formats, Criteria and Scoring. T.I. Publications:Israel. ti\_publications@intermail.co.il

Shurany, T., Stein, E., Brand, E. (2009). A Field Study on the Validity of the Quadri-Track Zone Comparison Technique. *European Polygraph*, 1–1(7), 5–23.

Shurany, T., Chaves, F. (2010). Integrated Zone Comparison Technique and ASIT PolySuite algorithm: A Field Validity Study. *European Polygraph*, 4(2), 71–80.

Thomas, M. (2002, January 30). Reference textbook: Forensic Psychophysiology Using The Polygraph. Electronic mail to J. A. Matte.

Verschuere, B., Meijer, R., Merckelbach, H. (2008). The Quadri-Track Zone Comparison Technique: It's just not science. A Critique to Mangan, Armitage, and Adams (2008). *Physiology & Behavior*, 1–2, 27–28.



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Volume 6 • 2012 • Number 1 (19)

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## Tests with numbers

**Key Words:** stimulation test, number test

We would like to use this article to start a discussion on some better ways to construct tests containing numbers. We would like to emphasize outright that we do not know the best question-building variant. The aim of our work

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is to draw polygraphists' attention to what can influence questions containing numbers when performing a polygraph examination, and how.

The peak of tension test (POT) was developed by Leonard Keeler (1994). Two types of classic POT procedures exist – a known solution peak and a searching peak (Saldžiūnas & Kovalenko, 2010). In field examinations, both types of POTs are often used in Japan, Russia, Belarus, Lithuania, Poland and Latvia.

### The classic POT test

When an individual has been apprehended stealing from an employer and is suspected of having taken other items, the searching peak can be used (Abrams, 1989). Starting with an overly high estimate and working downward, the following questions can be asked:

1. During the time that you worked at McCormick's, did you take more than \$5,000?
2. During the time that you worked at McCormick's, did you take more than \$4,000?
3. During the time that you worked at McCormick's, did you take more than \$3,000?
4. During the time that you worked at McCormick's, did you take more than \$2,000?
5. During the time that you worked at McCormick's, did you take more than \$1,000?
6. During the time that you worked at McCormick's, did you take more than \$500?

It is very unlikely that the individual would know how much money had been stolen, but they could probably make a reasonably accurate estimate. Knowing that the amount was not \$5,000 or \$4,000, the subject would not react to these questions. If the subject started doubting at \$3,000 and was unsure if that were the amount, a response would most likely be demonstrated at that point (Abrams, 1989).

Japanese polygraphists (Nakayama, 2002) are of the opinion that questions concerning location produced better detection than those concerning numbers (date, time, sum of money stolen, or the number of offenders). We also agree that questions concerning numbers must be formulated with care. Sometimes when one makes an assumption that the person under examination does not know (or remember) the precise number it is better to state the possible intervals in the question. A similar solution is applied by Russian

and Belarusian polygraphists. They refer to POT, GKT and CIT as indirect tests (Varlamov & Varlamov, 2010).

The numbers test used in Belarus

Vladimir Knyazev, when investigating one criminal case in which there was a need to identify the number of vehicles stolen by the suspect, formulated the following indirect search (CIT) test:

**Test No.....** *How many cars were stolen with your participation?*

From 20 to 25 cars?

31. From 5 to 10 cars?

32. From 40 to 45 cars?

33. From 30 to 35 cars?

34. From 45 to 50 cars?

35. From 10 to 15 cars?

36. From 25 to 30 cars?

37. From 15 to 20 cars?

38. From 35 to 40 cars?

39. From 1 to 5 cars?

Attention should be drawn to the fact that the numbers are stated randomly, i.e. not in increasing or decreasing order. The test's examination polygram is provided in Figure 1.

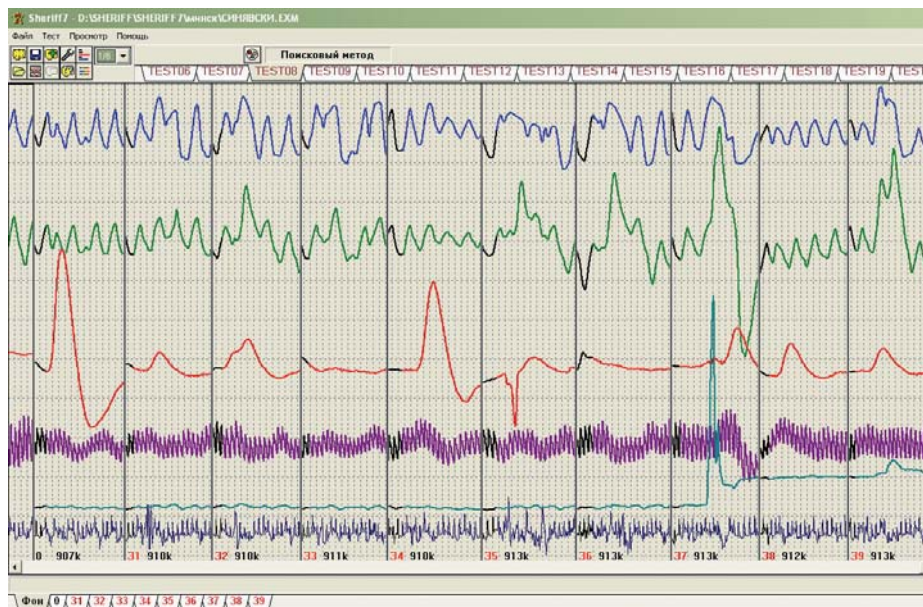


Figure 1. Polygram for examined person suspected in vehicle thefts



The examiner noted the strongest response after asking Question No. 34 (Figure 1). He made the assumption that the suspect had participated in the thefts of 45-50 vehicles. During the later investigation it was proved that the suspect had participated in thefts of more than 40 vehicles. Please note that a criminal is not likely to have a diary in which he/she registered all the thefts in which he/she participated. So-called similar crimes interference may be manifested (Nakayama, 2002). Therefore, it is impossible to identify the exact number of car thefts in which the suspect has participated. In the case of POT tests, the examined person becomes familiarized with the items prior to testing. Russians and Belarusians do not familiarize the person under examination with the items in the indirect tests; they only attempt to arouse the memories of the criminal act to the suspect during the pre-test conversation.

### Event knowledge test

The event knowledge test (EKT) (Saldžiūnas & Kovalenko, 2007-2011) is used for investigation of crime in Lithuania. It should be borne in mind that the pre-test conversation includes only the instruction on how one should behave during the polygraph examination. The test includes the sequence of questions and corresponding groups of answer options. The questions are discussed with the suspect. The suspect does not know the answer options and their sequence. During the examination, after the examiner states an answer option, the suspect gives his/her natural evaluation, such as YES, NO, I DON'T KNOW, I DIDN'T SEE IT, etc.

In 2011 we examined police officer D. with a polygraph on the issue of whether D. provides confidential information to criminals. The EKT from 15 questions was compiled. Question No. 9 and its answer options are shown in Table 1.

Table 1. Question No. 9 and its answer options

<b>No. 9. When did you last provide confidential information to persons who did not have the right to such information?</b>			
0.	You gave the information 5 years ago	no	<b>response</b>
1.	You gave the information 3 years ago	no	<b>response</b>
2.	You gave the information 2 years ago	no	<b>response</b>



3.	You gave the information 1 year ago	no	<b>response</b>
4.	You gave the information 1 month ago	no	
5.	You gave the information this year	no	<b>response</b>
6.	You don't remember when you last provide confidential information	I didn't give any	<b>response</b>
7.	You haven't provided any information to outside persons	yes	<b>response</b>

In Table 1 the first column shows the number of the answer, the second column provides the answer option, the third presents the information on how Officer D. evaluated the answer option, and the fourth column shows the examiner's decision according to the polygram (Figure 2) whether the response was present. Answers No. 6 and No. 7, which perform the control role, are introduced according to the EKT, therefore the question testing is performed only once. In this specific case the symptomatic responses were observed after all the answers with the exception of No. 4. Attention should be drawn to the fact that in the concealed information test (CIT) there is usually only one relevant item. In the provided example, all the answers (even the sacrificial answer No. 0) can be relevant. Remember that it is not necessary to evaluate the response after the sacrificial answer.

In the POT and EKT examples the numbers are provided in decreasing order (they can also be provided in increasing order); in an "indirect" test the numbers are presented randomly and the suspect cannot foresee when he/she will be asked.

Figure 2. The polygram of question No. 9 presented to Officer D. Curve 1 – pneumograph channel, Curve 2 – heart rate (HR), Curve 3 – cardiograph channel, Curve 4 – electrodermal channel, Curve 5 – plethysmograph channel.

Presented with the relevant number, therefore, it is possible that the suspect will find it difficult to counteract.

In order to get a better understanding of the ways of shaping of the suspect's responses, we performed a review of several articles.

Popovichev (2011) draws attention to the fact that two options of change of emotional tension (or stress) can be registered in the POT tests: when the suspect's stress tension is high starting with the first item and starts to reduce

after the relevant item (Figures 3&4). In Figure 3 the relevant item is No. 4, and in Figure 4 it is No. 3, after which the suspect's stress state reduces to the background. Hira & Furumitsu (2002) established that after the relevant item the cyclic recurrence of breathing changes in 24% of polygrams and the EDR amplitude reduces in 26.6% of polygrams.

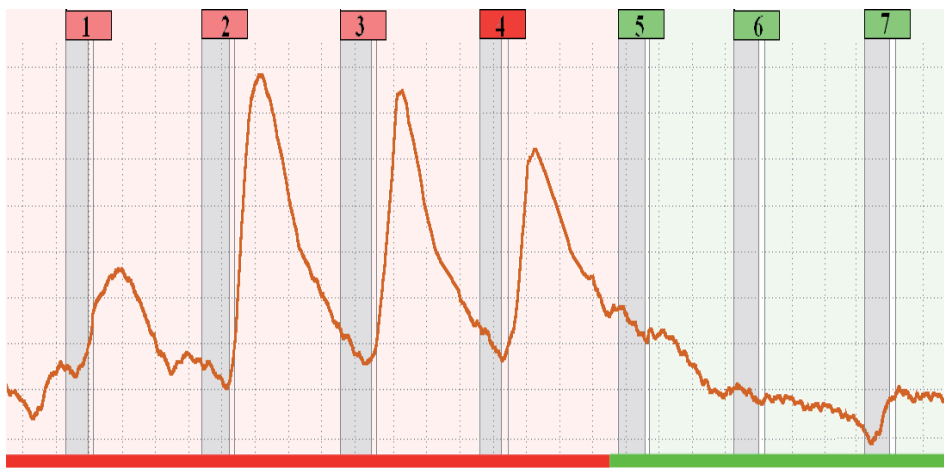


Figure 3. The first electrodermal response (EDR) change variant (Popovichev, 2011)

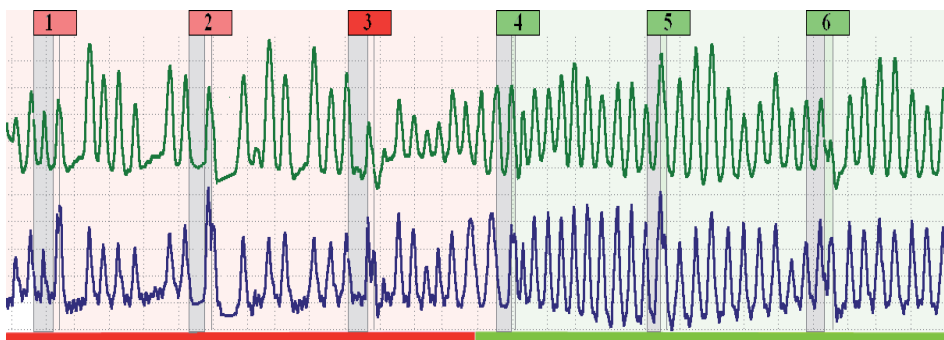


Figure 4. The first pneumograph channel response change variant (Popovichev, 2011)

Popovichev (2011) makes the assumption that the suspect's response to all the items up to the relevant item inclusive is aroused by the state of anticipation. Bradley, Silakowski & Lang (2008) and Lang, Wangelin, Bradley, Versace,

Davenport & Costa (2011) are also of the opinion that the anticipation of danger can arouse autonomic reactions.

Another way of changing the response according to Popovichev (2011) is when increased response is registered starting from the relevant item after all the following items (Figures 5 and 6).

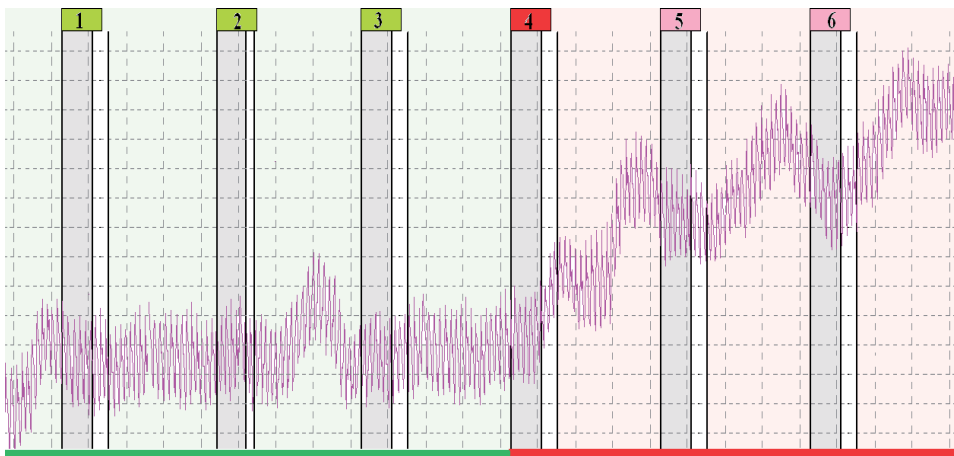


Figure 5. The increased response in the cardiograph channel, registered after relevant item No. 4

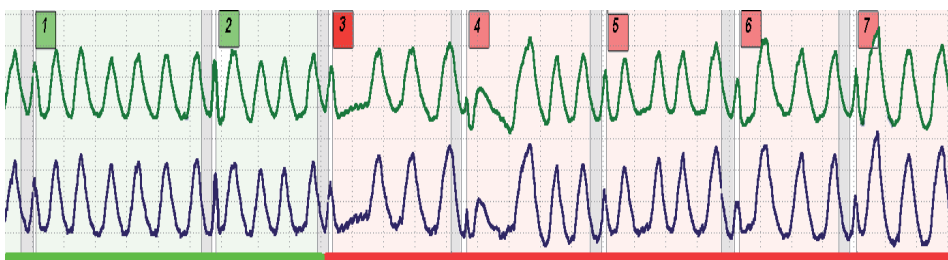


Figure 6. The second Pneumograph channel response change variant (Popovichev, 2011)

Popovichev (2011) makes the assumption that the change of response according to the second variant occurs when the suspect remains calm until the relevant item and the relevant item arouses a significant response which stays throughout the remaining items. We are of the opinion that this could occur

when the suspect remains calm until the relevant item and after the relevant item he/she is unable to return to the calm emotional state. We have not yet observed such a response change, so we are of the opinion that Popovichev (2011) registered the second response change variant due to the following reasons:

- The examination was performed using the classic POT
- These were laboratory examinations
- The suspects were familiarized with the items before the examination.

In working fields we most frequently register yet another progress of change of response during the examination: the suspect's stress is present until the relevant item, the response to the relevant item is higher, and after the relevant item the stress is a bit lower. Figure 1, according to both pneumograph channels, shows that the suspect is also under stress after the relevant item. Where there are more relevant items (Table 1), the polygram becomes more complex (Figure 2).

Let's discuss the issue of what the advantages or disadvantages would be if the items are presented in a consistent way (in the increasing or decreasing order) and in an inconsistent way. Here we will discuss only those cases where the suspect is not familiarized with the items (of the EKT answers) prior to the testing. First, where the numbers are presented consistently: 0; 1; 2; 3; 4;..... or 50; 45; 40; 35;....., the following assumptions can be made:

- The suspect is able to guess the following item after several first items.
- The suspect is able to get ready to counteract by foreseeing the succession of items.
- In case the suspect cannot remember the number in question, response to several adjacent items can be registered.
- Sometimes in polygrams (~25% – Hira & Furumitsu, 2002), the first response change variant can be registered (Popovichev, 2011).
- Sometimes it is difficult to select such a sacrificial item (the EKT answer) that does not result in a loss of important information without evaluating it. Table 1 presents an example where it is difficult to evaluate the response after Answer No. 1 unambiguously.
- Secondly, when the numbers in items are presented in an inconsistent way, i.e. 5; 8; 3; 0; 10;....., then the above-stated assumptions become irrelevant. When the numbers are presented inconsistently, in our opinion that would require a greater number of items. Due to the aforementioned reason the testing may take a longer time. However, we do not know of any studies to substantiate the conclusion that when using an inconsistent presentation of numbers in items a better response is registered.

## Summary

1. When developing tests containing numbers, it is very important to evaluate whether the participant in criminal activities is able to memorize the numbers. It may be that he/she only knows them approximately. Should a long time have passed from the event or the criminal have committed several similar crimes, he/she can confuse the numbers.
2. Although Japanese polygraphists recommend using tests involving numbers as sparingly as possible, the experience of Lithuanian and Belarusian polygraphists shows that where tests with numbers are used in a well-thought-out manner one can obtain much important information on the criminal event.
3. Comprehensive studies are needed in order to identify the cases in which it is more expedient to present the numbers in a consistent or inconsistent succession.

## References

- Abrams S. (1989), *The Complete Polygraph Handbook*. Toronto: Lexington Books.
- Bradley M, Silakowski T., Lang P., (2008), Fear of pain and defensive activation, *Pain*, 137(1), 156–163.
- Hira S. & Furumitsu I. (2002). Polygraphic examinations in Japan: application of the guilty knowledge test in forensic investigations, *International Journal of Police Science and Management*, 4(1), 16–27.
- Keeler L., (1994) The detection of deception. *Polygraph*, 239(2), 162–173.
- Lang P., Wangelin B., Bradley M., Versace F., Davenport P., Costa V. (2011), Threat of suffocation and defensive reflex activation, *Psychophysiology*, 48(3):393–6.
- Nakayama M. (2002), Practical use of the concealed information test for criminal investigation in Japan, *Handbook of Polygraph Testing*. London: Academic Press.
- Popovichev S. (2011), Scoring of POT with system “Score”, Сборник материалов международной научно-практической конференции специалистов-полиграфологов органов внутренних дел, Sochy, 204–213 [text in Russian].

Saldžiūnas V. and Kovalenko A. (2008a), The event knowledge test, *European Polygraph*, 1(3), 21–29.

Saldžiūnas V. and Kovalenko A. (2008b), The event knowledge test (EKT) in Polygraph Examination (in case murder), *European Polygraph*, 2(4), 137–142.

Saldžiūnas V. and Kovalenko A. (2008c), The event knowledge test (EKT) in Polygraph Examination (common notice of tactics), *European Polygraph*, 3–4(5–6), 209–220.

Saldžiūnas V. and Kovalenko A. (2009a), Problems of questions in event knowledge test, *European Polygraph*, 3(2), 69–75.

Saldžiūnas V. (2009b), EKT lub test wiedzy o zdarzeniu, In: *Wykorzystanie wariografu (poligrafu) w badaniach kryminalistycznych oraz kadrowych* (21–23), Wydawnictwo wyższej szkoły policji w Szczytnie [text in Polish].

Saldžiūnas V., Kovalenko A. and Soshnikov A. (2009c), Probability assessment of the value of psychophysiological stimuli, *European Polygraph*, 1(7), 25–31.

Saldžiūnas V., Kovalenko A., Gaidarov K. (2009d), The problems of truth perception during psychophysiological examination, *European Polygraph*, 3–4(9–10), 145–152.

Saldžiūnas V. and Kovalenko A. (2010), Field and Laboratory Polygraph Examinations, *European Polygraph*, 4(14), 213–228.

Saldžiūnas V. and Kovalenko A. (2011), A little about memory traces, *European Polygraph*, 1(15), 11–25.

Saldžiūnas V. and Kovalenko A., Efficiency formula for polygraph examination, *European Polygraph* (forthcoming).

Saldžiūnas V. and Kovalenko A., *from CIT to EKT*, Polygraph, (in press).

Saldžiūnas V. and Kovalenko A., The Ways of Efficient Use of Screening, *Polygraph*, (forthcoming).

Saldžiūnas V. and Kovalenko A., Legal regulation and practice of polygraph examinations in the Republic of Lithuania, *Polygraph*, (forthcoming).

Varlamov V. A. and Varlamov G. V. (2010), Lie detection with computerized polygraph, Moscow, Print-Centr [text in Russian].



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Volume 6 • 2012 • Number 1 (19)

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## The Use of the Polygraph with Sex Offenders in the UK

**Key words:** Polygraph, sex offender assessment, UK sex offender legislation.

### Introduction

For more than ten years the polygraph has been the subject of research and increased application with sex offenders in the United Kingdom. However, it is not without its detractors (Ben-Shakhar, 2008; Lykken, 1998; Meijer, Verschuere, Merckelbach and Crombez, 2008). Indeed, Craig (2011), described it as “a lightning rod for controversy” (p. 59), principally because of ongoing disputes with regard to its scientific acceptability (Grubin, 2008), its accuracy/validity (Madsen, 2009) and its ethical standing (Vess, 2010). Nonetheless, largely due to its widely accepted utility, post-conviction sex offender

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polygraph testing (PCSOT) is “now increasingly viewed by its users as an invaluable tool” (Holden, 2009: xxiv).

## Early Applications of Polygraph to Sex Offender Work in the USA

Wilcox (2000) explored the clinical application of the polygraph to post-conviction assessment, supervision and monitoring of sex offenders, noting that in the United States the polygraph’s use with sex offenders dated back to the early 1970s. However, it was not until the 1980s that practitioners and researchers such as Abrams (1991) began to systematically examine the polygraph’s potential in post-conviction sex offender work. Subsequent research (Ahlmeier, Heil, McKee and English, 2002; English, Jones, Patrick, Pasini-Hill and Gonzales, 2000; and O’Connell, 2000) continued to demonstrate increased offence-related disclosures when employing the polygraph (in addition to other intervention and assessment techniques).

However, the use of polygraph testing to inform risk assessment and management of sex offenders in the UK is still relatively new (Gannon, Beech and Ward, 2008, 2009; Grubin, 2008, 2010; and Wilcox and Buschman, 2011). On the other hand, in the US polygraph testing is used as part of almost 80% of adult sex offender treatment programs and 50% of those for adolescents (McGrath, Cumming, Burchard, Zeoli and Ellerby, 2010). Holden (2009) also noted that a 2007 survey conducted by the American Polygraph Association revealed that 46 out of 50 American states “employ PCSOT for the treatment and oversight of sexual offenders”, whilst the other four are currently reviewing its applicability to their needs and circumstances (p. xxiv).

## Polygraph, Risk Assessment and Public Protection

To put polygraph employment into context, the authors note that there has been an emphasis on risk management and public protection in recent UK legislation and penal policy. However, whilst the terms of sentences for “serious” offences have increased (e.g. note “Preventative” sentencing under the Criminal Justice Act 1991 and the introduction of Indeterminate Sentences for Public Protection under the Criminal Justice Act, 2003), the reality is that there are only a minority of incarcerated offenders who will not be released from custody (on license) at some point in the future. Further, many



convicted offenders will receive community rather than custodial sentences. Therefore, the accurate assessment and safe management of risk posed by sex offenders in the community is of paramount importance (Beech, Craig and Browne, 2009; Hanson and Morton-Bourgon, 2009; Hanson and Thornton, 2000; and Wilcox, Beech, Markall and Blacker, 2009) and whilst perhaps sometimes inflated by the media, recidivism rates are a valid concern. In a comprehensive meta-analysis of existing research studies, Hanson and Morton-Bourgon (2005) observed an average sexual recidivism rate of 13.7% and general recidivism rate amongst these sexual offenders (for any offence) of 36.2% over an average follow-up period of five to six years. Further, research demonstrates that the rate of occurrence for both sexual and violent offences greatly exceeds that of conviction (e.g. Pilkington and Kremer, 1995; Taylor, 1999). Indeed, some research suggests that sexual recidivism can be up to 5.3 times that indicated by official reconviction rates (Falshaw, Friendship and Bates, 2003). This data gives some insight into the challenges faced by community criminal justice practitioners, who are tasked with accurately assessing, safely managing and effectively treating such individuals.

UK criminal justice initiatives have included the sharing of information through Multi-Agency Public Protection Arrangements (MAPPA) (Criminal Justice and Court Services Act, 2000) and the development of evidence-based sexual offending treatment programs (see Beech, Craig and Browne, 2009 for overview).

### Early UK Polygraph Review

Historically, the UK government investigated the use of the polygraph to improve employment vetting and security largely in response to espionage at a high national level during the period of the famous Geoffrey Prime spy case. In relation to this, the British Psychological Society (BPS, 1986) was instructed to prepare a formal appraisal of the polygraph in relation to its proposed use in safeguarding sensitive government information. However, the BPS committee concluded that, in their opinion, employment of the polygraph did not meet the standards required for acceptance within the scientific community. In response to this report and other advice obtained by the government, a decision was taken to abandon the proposal to use the polygraph at that time for this purpose.

## Revisiting the Use of Polygraphy in Sex Offender Work

Subsequently, at the end of the 1990s, practitioners in the UK's sex offender field began to explore the post-conviction application of polygraphy after reported positive outcomes from its use in the United States (Salter, 1997; Wilcox, 1999). This led to polygraph trials being introduced within the National Probation Service with progressive increases in design complexity and participant numbers (Ramsey and Farmer, 2008). Further to the introduction of initial polygraph trials (Grubin, Madsen, Parsons, Sosnowski and Warberg, 2004; Wilcox, Sosnowski and Middleton, 1999; Wilcox, Sosnowski, Warberg and Beech, 2005), the polygraph was reviewed once again by the British Psychological Society (BPS, 2004), though similar conclusions were drawn to those in their earlier report.

The BPS review continued to hold that there was limited evidence of the effectiveness of polygraphy in general or in the specific area of PCSOT. However, the BPS did note that there is a developing body of evidence to suggest that the polygraph can encourage sex offenders to disclose their deviant thoughts and behaviors in ways that may assist those responsible for their supervision and treatment. Further, the BPS review body considered that the polygraph may assist offenders in developing more effective self-control. Whilst this report concluded that the validity of the polygraph in its use with sex offenders has not been scientifically established, it is notable that these conclusions did not this time serve to dissuade the UK government from investigating its further use.

Indeed, by the mid-2000s the government had agreed to assess the utility of the polygraph in work with sex offenders, and relatedly, it supported the training of British professionals in the specific area of PCSOT. Ramsey and Farmer (2008) noted that "since 2005, the government has been committed to testing the use of compulsory lie detector tests in the management of convicted sex offenders" (p. 15). Continuing, they reported that "this was followed in 2007 by the Government's 'Review of the Protection of Children from Sex Offenders,' which contained an action to pilot mandatory polygraph tests as a management tool for child sex offenders, and the Offender Management Act 2007 which contained the legislative provision for this" (ibid).

The first investigations based on study probation involving convicted male sex offenders produced only qualitative information that was subsequently shared with treatment facilitators and probation supervisors. These was con-

ducted in September 1999, when five men on probation for sexual offences volunteered to be polygraphed on a single occasion (Middleton, Wilcox and Sosnowski, 1999). "The results suggested that workers were able to obtain more detailed information about index offences, further disclosures of past sexual offending, and more information about short-term risk and non-compliance with conditions of probation orders (Wilcox, Sosnowski and Middleton, 1999) (p. 234)".

A further quantitative study (N=14) was supported by the West Midlands Probation Service and carried out in the spring of 2000 (Wilcox, 2002; Wilcox and Sosnowski, 2005). It produced statically significant indications of wide-ranging paraphilic interests and behaviors amongst these men, as well as earlier onset and a greater prevalence of offence-related behaviors than had been known by Probation Services prior to employment of a single polygraph examination with each of these men. Specifically, the average age of sexual offending onset determined through a review of official records was 28 years prior to polygraph examination, whilst further to the administration of a single sexual history disclosure polygraph examination the age of onset given by these offenders reduced to 13.5 years. Excluding admissions of non-contact offences such as voyeuristic behavior and public masturbation, age of onset acknowledged by these offenders was 16 years following PCSOT. The numbers of reported paraphilic interests further to a single polygraph examination also increased from between two and four paraphilic interests to an average of six per offender. Lastly, evidence of significant offence crossover and increased numbers of victims and incidents of offending were also reported further to polygraph examination with reporting of non-contact sex offences increasing by a factor of 4.7 and that of contact offence victims increasing by a factor of 3.5. Prior to polygraph examination the mean number of sexual offence victims known to probation amongst these offenders was 48.1 and the mean number of sexual offence episodes was 92; however, following a single sexual history disclosure polygraph examination, the mean number of victims acknowledged by these offenders was 185.6 and the mean number of sexual offence episodes reported was 418, reflecting increases by factors of 3.9 and 4.5 respectively (Wilcox, Sosnowski, Middleton & Grubin, 2002). Notably, these men had previously engaged in an average of 141 hours of probation-based sex offender group work treatment at the time that they were polygraphed and so there was a general perception that their offending history was quite well understood by this time.

## More Comprehensive Polygraph Trials

The Home Office subsequently commissioned two pilot studies on the use of the polygraph, beginning in 2002 (Grubin et al., 2004) and ending in late 2005 (Grubin, 2006; 2010). This research gave rise to further associated studies exploring the usefulness of PCSOT (Grubin, Madsen and Parsons, 2004; Wilcox and Donathy, 2008).

Grubin et al. (2004) polygraphed 32 sex offenders participating in community-based treatment programs. 97% of the sample (n=31) disclosed a total of 76 high risk behaviors by the point of the first test, of which probation staff had previously been unaware. Most disclosures were made at the pre-examination stage; either to the researcher or during the pre-test interview. Notably however, 78% (n=25) of the men “failed” the polygraph test (i.e. deception was indicated), and of those, 80% (n=20) then made further disclosures relating to high-risk behavior. The disclosures made included one man having had unsupervised contact with the child victim of his offence; another man having committed frottage against young girls on more than one occasion; and a man having visited public toilets in order to seek potential child victims. Twenty-one of the 32 participants underwent second polygraph tests at a later stage of the research. On this occasion, 71% (n=15) disclosed a total of 34 further high-risk behaviors, though 60% of these men (n=9) had already advised their supervising officers of this information in advance of testing, suggesting that the polygraph promoted greater openness about risk-related issues during supervision/treatment. Further, far fewer offenders “failed” the polygraph (i.e. gave indications of deception) at the point of the second test (29%, n=6). These results supported Grubin’s earlier assertions that “polygraphy can contribute substantially to treatment programs, as well as assisting offenders to avoid the sorts of behaviors that increase their risk of re-offending: it encourages offenders to disclose information that is relevant to their treatment and supervision” (2002: 48). Grubin further argued that, in the context of PCSOT, the polygraph might be better viewed as a “truth facilitator” as opposed to a “lie detector” (p. 51) and that concerns in relation to reliability and validity were less pertinent in this context than when it is used in other settings.

In a further, more extensive study (Grubin, 2006; 2010), 347 convicted sex offenders, who were completing community treatment programs in selected probation areas in England, undertook polygraph testing on a voluntary basis. Outcome data was compared to a sample of sex offenders under supervi-

sion in probation areas not involved in the research who had not been asked to participate in or had undergone polygraph testing. Supervising officers of the polygraph sample reported that new disclosures relating to risk were made in 70% of first polygraph tests. In comparison, only 14% of supervising officers reported new disclosures amongst the non-polygraphed sample. In terms of the nature of disclosures made by the polygraph group, 27% of these were rated as being of “medium” severity (“potential preludes to offending, such as going to places where there are potential victims”) and 10% were deemed to be “high” in seriousness (“specific breaches or actual offending”). Out of the 180 supervising officers of the polygraph group, 93% rated PCSOT as “somewhat helpful” or “very helpful” in their work with those particular clients. Grubin (2010) concluded that “polygraphy is associated with marked increases in the quantity, and an enhancement in the quality, of new disclosures made by offenders. The odds were 14 times greater that a polygraphed offender would make disclosures relevant to their treatment or supervision as opposed to a non-polygraphed one” (p. 274).

## Legislation Changes and Continuing Professional Debate

The Offender Management Act 2007 (pp. 28–30) introduced the polygraph testing of convicted sex offenders in order to inform risk assessment/management during their license period (where the offender received a custodial sentence of 12 months or more, for a specified sexual offence). The Act was drafted so that this compulsory testing would firstly be piloted in selected probation areas.

Some researchers have suggested that individuals who voluntarily agree to be polygraphed might naturally be more disposed towards making disclosures (e.g. Meijer, Verschuere, Merckelbach and Crombez, 2008). However, Grubin (2002) expressed the opinion that “those offenders who are motivated to not re-offend found the procedure (polygraphy) beneficial, while those who are not motivated, avoided it” (p. 51). As such, the introduction of a mandatory polygraph testing offer was considered to an opportunity to compare results between voluntary and mandatory participants, as well as exploring the different theoretical perspectives of Meijer et al. (2008) and Grubin (2010). The key focus of this, most recent pilot has been to demonstrate whether mandatory polygraph tests provide probation workers with increased disclosures, and crucially, to examine whether those sex offenders subject to PCSOT requirements disclose more information about their behavior, attitudes and

thinking than those who are not subject to regular polygraph testing (West Midlands MAPPA; Annual report, 2009-2010). The pilot was also intended to further explore exactly how PCSOT informs risk management. A preliminary research report for the Ministry of Justice recommended that, within the pilot, “the impact of disclosures triggered by polygraph testing should be measured in terms of the impact on risk management. This should include recording all actions taken by offender managers in response to disclosures and not just changes in assessed levels of risk” (Wood, Kemshall, Westwood, Fenton and Logue, 2010: 4). The pilot commenced in April 2009 and was planned to run for three years. The authors note that this further trial was concluded on 1 July 2011, reportedly because the number of tested offenders required to complete this study had been met nine months earlier than anticipated.

## Conclusions

The results of this latest polygraph trial have not yet been published, though the UK government clearly has a strong interest in exploring best practices in sex offender treatment, assessment and supervision, as evidenced by prominent managers and researchers within the Ministry of Justice and the National Probation Service Public Protection Unit (Ramsay and Farmer, 2008; Wood et al., 2010). However, within the popular press there have been accusations raised that the plan to employ the polygraph has been abandoned, with a claim that the early cessation of the current three-year trial occurred due to government financial constraints (Dunn, 2011). Nevertheless, in this same article, the Ministry of Justice spokesperson reported “we are now evaluating the results (of the study) and (will) consider our options”. While in America a number of states have provision for mandatory polygraph testing of convicted sex offenders, to our knowledge the legislation introduced by the UK government (The Offender Management Act, 2007) represents the only legislation supporting the national adoption of PCSOT. Further, although no one, prior to the formal reporting of the results of this study, has committed to making a public statement about this most recent pilot, the informal opinions we have gained have continued to be positive and supportive of its further employment within the field of sex offender work in the UK.

Of interest, *The Times* newspaper dated 31 December 2011 ran an article entitled “Suspects to face police lie detector for first time” (Hamilton, 2011). The piece reflected that police had begun using polygraphs on suspected sex

offenders in advance of bringing charges, describing that the tests had been used in 25 recent investigations “to speed up the risk assessment process”. Tests were carried out on first-time suspected offenders who volunteered to cooperate with the police, though any evidence elicited during the examinations was not admissible in court. The Hertfordshire Police Head of the Child Protection Unit said that polygraph testing should be regarded as an additional tool that significantly reduces investigation time and has also often provided information relating to additional unreported offences. This pilot, focusing on the use of polygraphy to make decisions as to whether or not suspects should be charged, has been reported upon positively, and a further 12-month trial is expected to begin in April 2012.

## References

- Abrams, S. (1991). The use of the polygraph with sex offenders. *Annals of Sex Research, 4*, 239–263.
- Ahlmeyer, S. Heil, P., McKee, B. and English, K. (2000). The impact of polygraphy on admissions of victims and offences in adult sex offenders. *Sexual Abuse: A Journal of Research and Treatment, 12*, 123–138.
- Beech, A. R., Craig, L.A., & Browne, K. D. (2009). *Assessment and Treatment of Sex Offenders: A Handbook*. Chichester, UK: Wiley-Blackwell.
- Ben-Shakhar, G. (2008). The case against the use of polygraph examinations to monitor post-conviction sex offenders. *Legal and Criminological Psychology, 13*, 191–207.
- British Psychological Society (1986). Report of the working group on the use of the polygraph in criminal investigations and personnel screening. *Bulletin of the British Psychological Society, 39*, 81–94.
- British Psychological Society (2004). *A review of the current scientific status and fields of application of Polygraphic Deception Detection: Final Report*. Leicester, UK: BPS.
- Craig, L. (2011). Book Review of “The Use of the Polygraph in Assessing, Treating and Supervising Sex Offenders: A Practitioner’s Guide” [by D. T. Wilcox (Ed.)]. *Forensic Update, 104*, 59–60.



Dunn, T. (2011, August 30). Lie detector tests for paedos axed. *The Sun*. Retrieved from <http://www.thesun.co.uk>.

English, K., Jones, L., Patrick, D., Pasini-Hill, D., & Gonzales, S. (2000). We need you to become experts in the post-conviction polygraph. *Polygraph*, *29*, 44–62.

Falshaw, L., Friendship, C. & Bates, A. (2003). *Sexual Offenders: Measuring reconviction, reoffending and recidivism: RDS Home Office Findings*, 183. London: Home Office.

Gannon, T. A., Beech, A. R., & Ward, T. (2008). Does the polygraph lead to better risk prediction for sexual offenders? *Aggression and Violent Behaviour*, *13*(1), 29–44.

Gannon, T. A., Beech, A. R., & Ward, T. (2009). Risk Assessment and the Polygraph. In D. T. Wilcox (Ed.), *The Use of the Polygraph in Assessing, Treating and Supervising Sex Offenders: A Practitioner's Guide*. Chichester, UK: Wiley-Blackwell, pp. 129–154.

Grubin, D. (2002). The potential use of polygraphy in forensic psychiatry. *Criminal Behaviour and Mental Health*, *12*, 45–55.

Grubin, D., Madsen, L. & Parsons, S. (2004). A preliminary study of the contribution of periodic polygraph testing to the treatment and supervision of sex offenders. *Journal of Forensic Psychiatry and Psychology*, *15*(4), 682–695.

Grubin, D., Madsen, L., Parsons, S., Sosnowski, D. & Warberg, B. (2004). A prospective study of the impact of polygraphy on high risk behaviours in adult sex offenders. *Sexual Abuse: A Journal of Research and Treatment*, *16*, 209–222.

Grubin, D. (2006). *Polygraph Pilot Study: Final Report*. London, UK: Home Office.

Grubin, D. (2008). The case for polygraph testing of sex offenders. *Legal and Criminological Psychology*, *13*, 177–189.

Grubin, D. (2010). A Trial of Voluntary Polygraph Testing in 10 English Probation Areas. *Sexual Abuse: A Journal of Research and Treatment*, *22*(3), 266–278.



Hamilton, F. (2011, December 31). Suspects to face police lie detector for first time. *The Times*. Retrieved from <http://www.thetimes.co.uk>.

Hanson, R. K. & Thornton, D. (2000). Improving risk assessments for sex offenders: A comparison of three actuarial scales. *Law and Human Behavior*, *24*(1), 119–136.

Hanson, R. K. & Morton-Bourgon, K. (2005). The Characteristics of Persistent Sexual Offenders: A Meta-Analysis of Recidivism Studies. *Journal of Consulting and Clinical Psychology*, *73*(6), 1154–1163.

Hanson, R. K., & Morton-Bourgon, K. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment*, *21*, 1–21.

Holden, E. J. (2000). Pre and post-conviction polygraph: Building blocks for the future – procedures, principles, and practices. *Polygraph*, *29*, 69–97.

Holden, E. J. (2009). Foreword. In D. T. Wilcox (Ed.), *The Use of the Polygraph in Assessing, Treating and Supervising Sex Offenders: A Practitioner's Guide*. Chichester, UK: Wiley-Blackwell, pp. xxiii–xxvi.

Lykken, D. T. (1998). *A tremor in the blood: Uses and abuses of the lie detector*. (2nd ed.). New York, NY: Plenum.

Madsen, L. (2009). The Accuracy of Polygraph in the Treatment and Supervision of Sex Offenders. In D. T. Wilcox (Ed.), *The Use of the Polygraph in Assessing, Treating and Supervising Sex Offenders: A Practitioner's Guide*. Chichester, UK: Wiley-Blackwell, pp. 155–180.

McGrath, R. J., Cumming, G. F., Burchard, B., Zeoli, S. & Ellerby, L. (2010). *Current Practices and Emerging Trends in Sexual Abuser Management: The Safer Society 2009 North American Survey*. Brandon, Vermont: Safer Society Press.

Meijer, E. H., Verschuere, B., Merckelbach, H. L. G. J. & Crombez, G. (2008). Sex offender management using the polygraph: A critical review. *International Journal of Law and Psychiatry*, *31*(5), 423–429.

Middleton, D., Wilcox, D. T., & Sosnowski, D. (1999). *Truth, Lies and The Polygraph*. Presentation to the National Annual Conference of the National Organisation for the Treatment of Abusers (NOTA). York.

O'Connell, M.A. (2000). Polygraphy. In Laws, D. R., Hudson, S. M. and Ward, T. (eds), *Remaking relapse prevention with sex offenders: A sourcebook*. Thousand Oaks, CA: Sage.

Pilkington, D. & Kremer, D. (1995). A review of the epidemiological research on child sexual abuse. Community and college student samples. *Child Abuse Review*, 4, 302–315.

Ramsey, D. & Farmer, M. (2008). Polygraphy with sexual offenders, *Prison Service Journal*, 178, 15–19.

Salter, A. C. (1997). *Sex Offender Assessment and Risk Management Issues*. National Organisation for the Treatment of Abusers (NOTA) Annual Conference. Southampton, England.

Taylor, R. (1999). *Predicting Reconvictions for Sexual and Violent Offences using the Revised Offender Group Reconviction Scale*. Home Office Research Findings 104. London: Home Office.

Vess, J. (2010). Ethical Practice in sex offender assessment: Consideration of actuarial and polygraph methods. *Sexual Abuse: A Journal of Research and Treatment, Online Issue*.

West Midlands MAPPA (2009–2010). *Multi Agency Public Protection Arrangements: Annual Report*. Retrieved on 3 January, 2012 from: [http://www.swmprobation.gov.uk/wpcontent/uploads/2010/11/WMids\\_Mappa\\_09-10\\_lr.pdf](http://www.swmprobation.gov.uk/wpcontent/uploads/2010/11/WMids_Mappa_09-10_lr.pdf).

Wilcox, D. T. (1999). Polygraph testing. *NOTA (National Organisation for the Treatment of Abusers) News*, 30, 29–31.

Wilcox, D. T., Sosnowski, D., & Middleton, D. (1999). The use of the polygraph in the community supervision of sex offenders. *Probation Journal*, 46(4), 234–240.

Wilcox, D. T. (2000). Application of the clinical polygraph examination to the assessment, treatment and monitoring of sex offenders. *Journal of Sexual Aggression*, 5, 134–152.

Wilcox, D. T. (2002). *Polygraph Examination of British Sexual Offenders: A Pilot Study on Sexual History Disclosure Testing*. Unpublished. Doctoral Dissertation, University of Surrey, 148–248.

Wilcox, D. T., Sosnowski, D., Middleton, D., & Grubin, D. (2002). British applications of the polygraph to sex offender work: An update. *NOTA (National Organisation for the Treatment of Abusers) News*, 41, 12–14.

Wilcox, D. T. and Sosnowski, D. E. (2005). Polygraph examination of British sexual offenders: A pilot study on sexual history disclosure testing. *Journal of Sexual Aggression*, 11(1), 3–25.

Wilcox, D. T., Sosnowski, D., Warberg, B., & Beech, A. R. (2005). Sexual history disclosure using the polygraph in a sample of British sex offenders in treatment. *Polygraph Journal*, 34(3), 171–181.

Wilcox, D. T., & Donathy, M. L. (2008). The utility of the polygraph with sex offenders in England. *Conférence Permanente Européenne de la Probation*, July.

Wilcox, D., Beech, A. R., Markall, H., & Blacker, J. (2009). Actuarial risk assessment and recidivism in a sample of UK intellectually disabled sexual offenders. *Journal of Sexual Aggression*, 15, 97–106.

Wilcox, D. T. & Buschman, J. (2011). Case Studies in the Utility of the Polygraph. *Sexual Offender Treatment*, 6(1), *Online Issue*.

Wood, J., Kemshall, H., Westwood, S., Fenton, A. & Logue, C. (2010). *Investigating disclosures made by sexual offenders: preliminary study for the evaluation of mandatory polygraph testing*. Research Summary 6/10. London: Ministry of Justice.





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## The Open Letter to Polygraphers

Dear Friends, and Colleagues, I decided to write this paper due to some of my concerns regarding the upcoming requirement of the APA regarding the usage of “Validated Techniques,” that included required methods of chart analysis based on the scoring systems employed during the research study of each of the particular techniques. Many of these techniques were validated using new evaluation methods that I believe have not proved to be more accurate than the older traditional methods.

I am in total agreement that we should use the most accurate technique format in order to raise the standard of our work and increase the trust in our profession. My concern is that the profession has been driven by a few individual researchers who are dazzling us with numbers and statistics. Statistically, if we have nine women in a room, eight of whom are still virgins, and one who is in her ninth month of pregnancy, we can say that nine women divided into nine months means that the average for each woman is one month of pregnancy. A true statistic, and yet a totally false statement.

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I would like to present to you a case of a multi-faceted examination evaluated by traditional vertical scoring (3-position scale), Horizontal Scoring System (HSS), and OSS 3. The first two systems conclude deception, the third, OSS 3, concludes no significant reactions, or no deception.

Either the traditional 3-position spot score that we have been employing for over 30 years is incorrect, and HSS which has been in use for over 20 years is incorrect, or the newest method, OSS 3, is mistaken.

Fortunately, this case concluded with a confession and the examinee returned some of the stolen items, so we are sure it was not a false confession, and that the two older methods were more accurate than the newer method.

This is not the first time I have observed this problem, and therefore it is of great concern to me. This problem seems more common in multi-faceted and multi-issue examinations than in single-issue examinations.

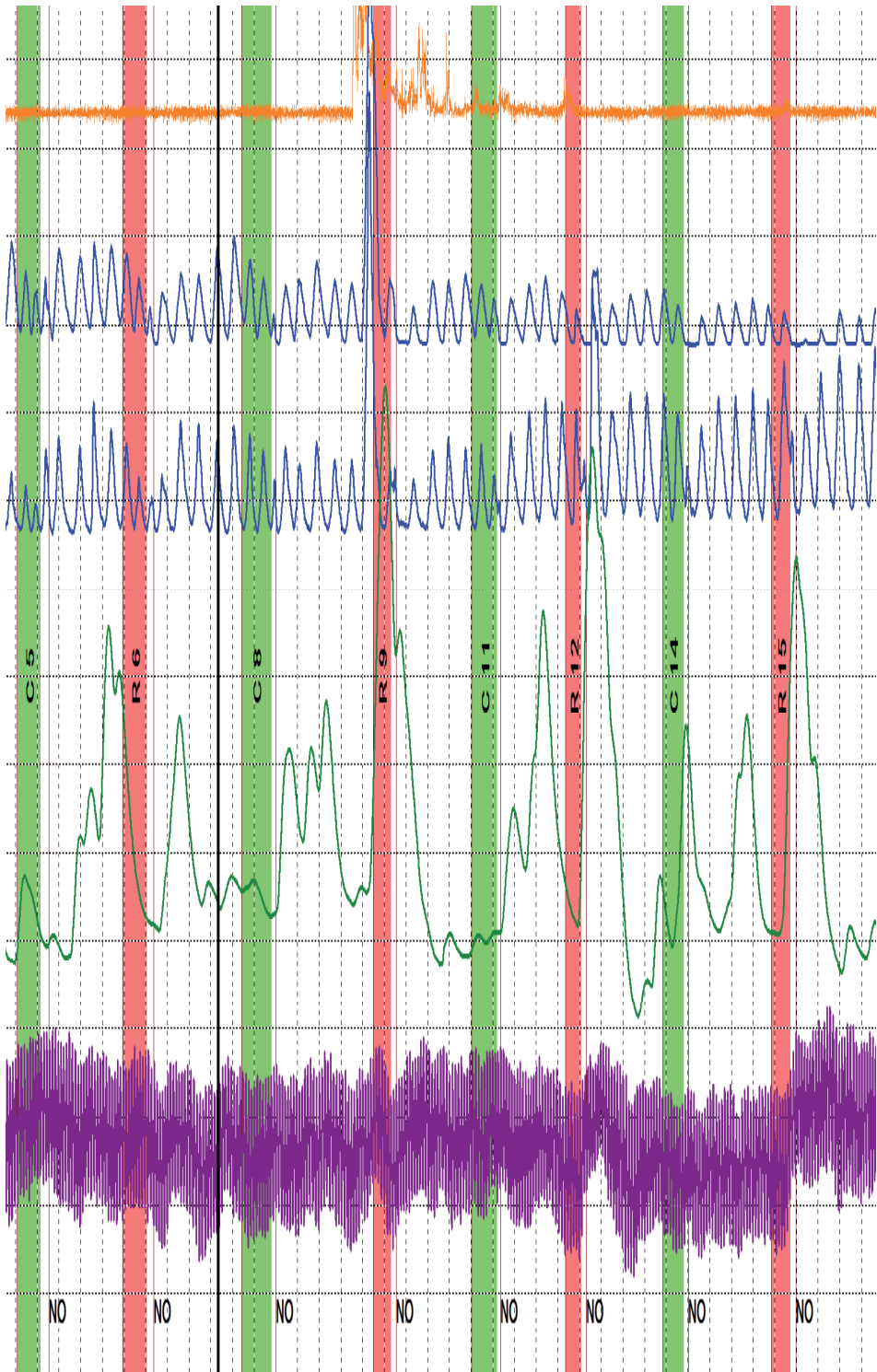
11 Another of my concerns is the short time period used in evaluating the pneumos by OSS 3. Pneumos are measured from the beginning of the question, and the window of evaluation often only allows for two to three breaths to be evaluated. One of these breaths is always the answering distortion cycle. This cycle is inconsistently affected by where the examinee's natural breathing cycle is when they must answer by exhaling due to the end of the examiner's question. This means only one or two breaths are actually considered that are not unduly affected. As you can see in the example below, less than 2 ½ breaths are being considered for analysis, of which one entire breath is the answering distortion cycle.

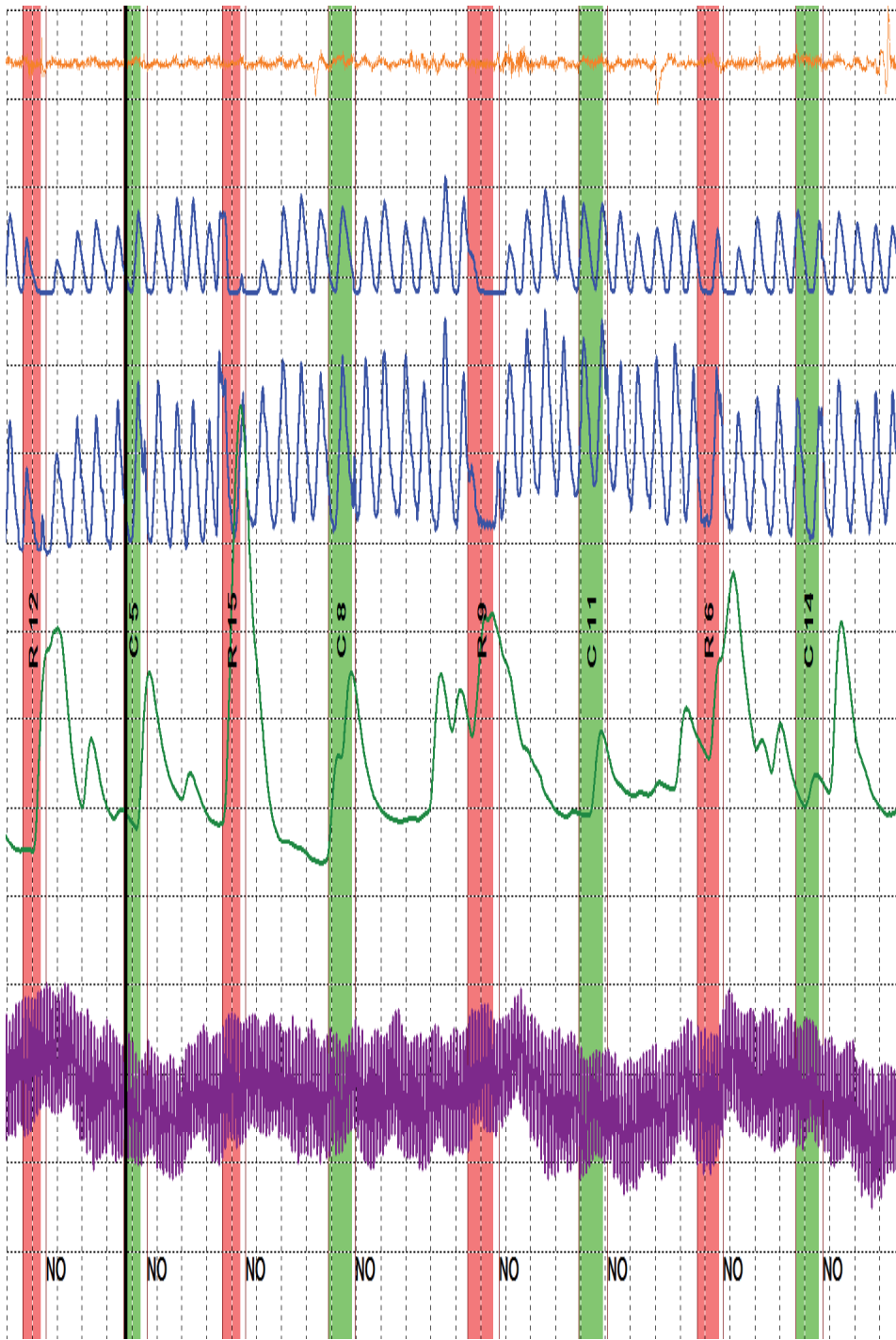
You will be able to judge for yourself that if the newer method failed to detect such obviously clear charts; this is in fact a very BIG problem. The test is an Integrated Zone Comparison Technique (IZCT) with four relevant questions.

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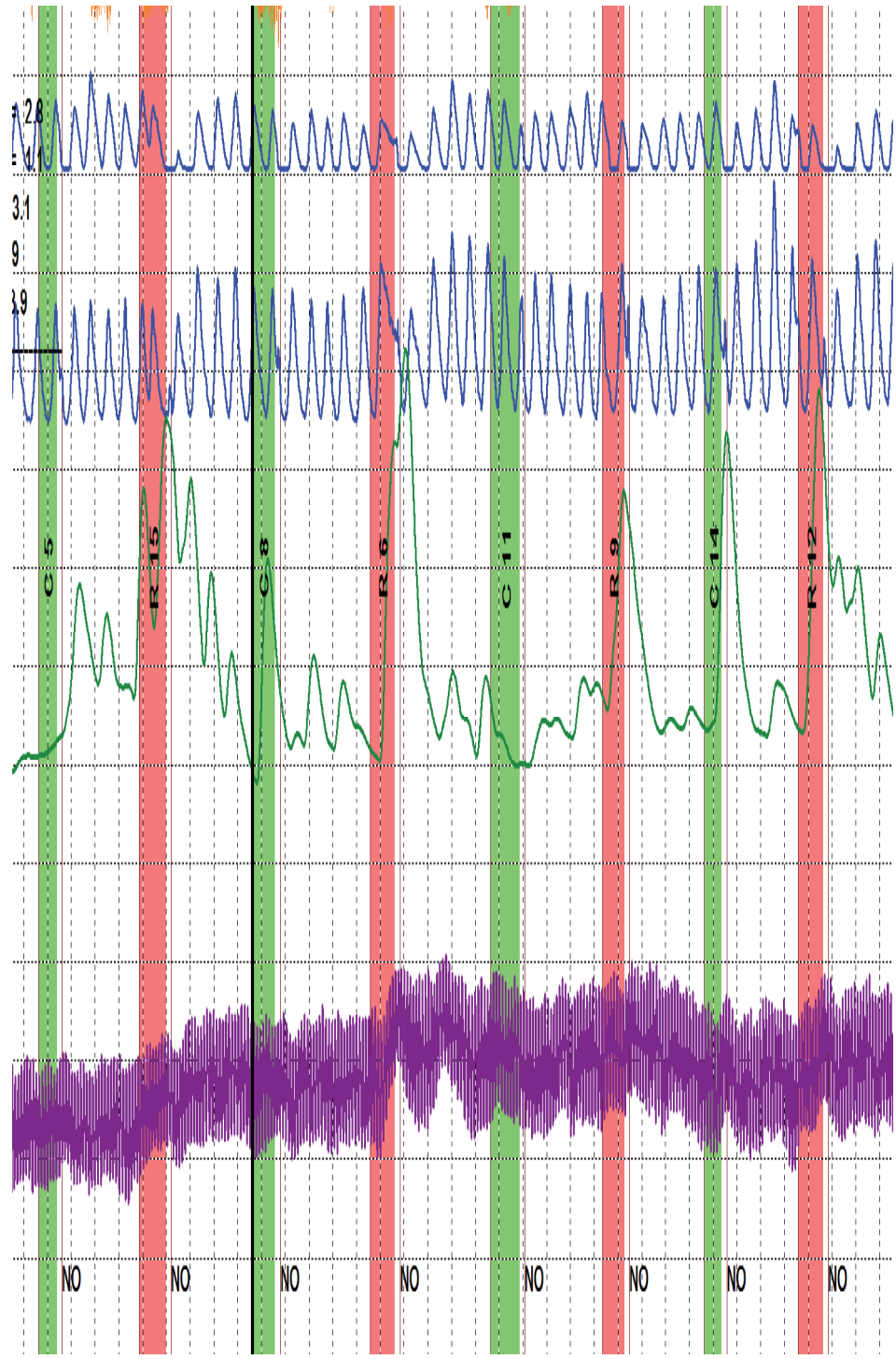
211

2









## Horizontal Scoring System (HSS)

	C5	R6	C8	R9	C11	R12	C14	R15
P1	6	7	5	1	2	4	3	8
P2	7	8	5	1	3	2	5	5
Avg. P	6.5	7.5	5	1	2.5	3	4	6.5
EDA	2	4	3	1	6	8	5	7
Cardio	4	5	1.5	1	2	7	2	8
S.T	12.5	16.5	9.5	3	10.5	18	11	21.5
	C8	R6	C11	R9	C14	R12	C5	R15
P1	7	3	2	5	4	8	1	7
P2	6	3	1	4	5	7	1	6
Avg. P	6.5	3	1.5	4.5	4.5	7.5	1	6.5
EDA	3.5	3.5	1	5	6	7	2	3.5
Cardio	3	3	1	5	5	5	2	7
S.T	13	9.5	3.5	14.5	15.5	19.5	5	17
	C14	R6	C11	R9	C5	R12	C8	R15
P1	1	5	2	8	3	6	4	7
P2	2	6	3	8	5	7	1	4
Avg. P	1.5	5.5	2.5	8	4	6.5	2.5	5.5
EDA	5	6	1.5	3	4	7	1.5	8
Cardio	1	8	2	7	3	5	4	6
S.T	7.5	19.5	6	18	11	18.5	8	19.5
Total	33	45.5	19	35.5	37	56	24	58

-12.5
Spot

-16.5
Spot

-19
Spot

-34
Spot

## Three-Point Scale manual evaluation

	R6	R9	R12	R15
P1	-1	0	-1	-1
P2	0	0	1	0
EDA	-1	0	-1	-1
Cardio	1	0	-1	-1
Spot Total	-1	0	-2	-3
P1	-1	-1	-1	-1
P2	-1	-1	-1	-1
EDA	-1	-1	-1	-1
Cardio	-1	-1	-1	-1
Spot Total	-3	-3	-3	-3
P1	-1	-1	-1	-1
P2	-1	-1	-1	-1
EDA	0	-1	-1	-1
Cardio	-1	-1	-1	-1
Spot Total	-2	-3	-3	-3
Total	-6	-6	-8	-9

Result of OSS3

**Limestone Technologies Inc.**  
**Objective Scoring System - Version 3**  
 By Raymond Nelson, Mark Handler and Donald Krapohl (2007)

**Result** No Significant Reactions  
**p-value** 0.001 Probability this result was produced by a deceptive person  
Cumulative normal distribution for deceptive subjects (Barland 1985)

**Technique** Multi-facet (MGQT) Using two-stage rules (Senter 2003)

Data Integrity - Artifact Detection 0.089 No significant differences in artifact distribution

Test Details	Spot Scores		Decision Alpha (1 tailed)	Components			
Exam #	499735	Question	p-value	Result	NSR	0.100	weight
Exam Date:	12-21-2011	R6	0.051	No Significant Reaction	SR	0.050	Pneumo 0.192
Examiner:	Tuvia	R9	<0.001	No Significant Reaction	Bonferonni corrected alpha	0.013	EDA 0.528
Report Date:	12-25-2011	R12	<0.001	No Significant Reaction	Use Bonferonni	TRUE	Cardio 0.280
Examinee:	[REDACTED]	R15	<0.001	No Significant Reaction	Test of Proportions (1 tailed)	0.050	Pulse O2 0.000

Questions	
t6	[REDACTED]
t9	[REDACTED]
t12	[REDACTED]
t15	[REDACTED]

Measurements (Kircher and Raskin 1988; Raskin Kircher Honts and Horowitz 1988)									Standardized Logged Ratios				
<b>Chart 1</b>									<b>Chart 1</b>				
	C5	R6	C8	R9	C11	R12	C14	R15	R6	R9	R12	R15	
P1	50.79	52.88	68.63	37.80	40.14	26.12	13.44	19.55	0.00	-2.11	0.00	0.00	
P2	56.66	77.65	63.45	64.41	127.38	84.26	88.18	83.46	1.46	0.19	1.00	3.00	
E	1.79	20.37	45.36	38.31	64.44	25.59	54.09	2.98	2.52	3.00	3.00		
C	1.77	5.08	7.74	2.39	11.85	2.30	12.04	0.00	0.00	0.00	0.00		
F	0.04	0.21	0.00	0.88	0.00	0.13	0.27	0.14	WMean	1.48	0.54	1.37	2.20
									Mean	1.40			
<b>Chart 2</b>									<b>Chart 2</b>				
	C5	R6	C8	R9	C11	R12	C14	R15	R6	R9	R12	R15	
P1	42.66	22.63	37.67	30.68	45.59	21.99	32.83	30.26	-3.00	0.00	0.00	-2.17	
P2	78.28	70.14	92.56	88.48	105.89	91.32	91.17	78.47	-1.10	0.19	-0.77	1.84	
E	21.94	51.89	27.85	27.27	0.00	44.04	38.41	11.97	-3.00	0.06	0.86	-1.44	
C	3.36	7.84	1.95	3.17	0.00	2.72	4.48	4.21					
F	0.00	0.00	0.00	0.18	0.05	0.65	0.00	0.00	WMean	-2.00	0.12	-0.17	0.15
									Mean	-0.58			
<b>Chart 3</b>									<b>Chart 3</b>				
	C5	R6	C8	R9	C11	R12	C14	R15	R6	R9	R12	R15	
P									3.00	3.00	3.00	3.00	

Conclusion

As an examiner since 1988 who has participated in many research projects, I believe that each day we should search for improvements, but as I see it today we are still far from the point of leaving our older known methods.

# Book reviews





EUROPEAN  
POLYGRAPH

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Volume 6 • 2012 • Number 1 (19)

*Meta-Analytic Survey of Criterion Accuracy  
of Validated Polygraph Techniques. Report Prepared  
for the American Polygraph Association Board of Directors,  
“Polygraph” Special Edition, 2011, vol. 40, no. 4*

The report of the American National Research Council<sup>1</sup> published in 2003 contains a number of highly critical remarks concerning the theoretical premises and the practice of polygraph examinations. Among the results of this criticism was a strategic turn in the operations of the American Polygraph Association, focused on adaptation of the achievements of forensic science, and especially on “seeking to increase the level of science in our practices, to standardize our methodologies, to focus on continuous improvement, to upgrade our education, and broaden our vision to cover not only the interests of members, but to include protection of the public, as well”, as Pamela Shaw, the President of the American Polygraph Association, wrote in the introduction to the work in question. Again, it turned out that nothing has an equally positive impact on the development of a field of knowledge and the ensuing practice as a disinterested but also uncompromising criticism of dated solutions, legacy system weaknesses, and common errors.

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<sup>1</sup> *The Polygraph and Lie Detection* (2003), Committee to Review the Scientific Evidence on the Polygraph, National Research Council of the National Academies, The National Academies Press, Washington DC.

The *Meta-Analytic Survey of Criterion Accuracy...* conforms to this current of modernisation of polygraph examinations, or – strictly speaking – to the effort to improve their scientific level **by standardisation of methodology of examinations conforming to modern requirements**. Such a point of view is most proper; the practical application of methods and techniques that have not been subjected to validation, with unknown accuracy and other factors influencing their diagnostic capacity, is simply **impermissible**, and experts (“experts”?) applying their own ideas for tests, own “modifications”, and own solutions, unfounded on thorough research, with delayed publication of results, should be situated beyond the realm of professionals. Still, it is about this that the authors of the report write clearly and openly, absolutely unambiguously defining one of the goals behind the origin of the report: “The goal is to eliminate the use of un-standardized, non-validated or experimental techniques in field settings where decisions may affect individual lives, community safety, professional integrity, and national security”. This sentence is all the more worthy of emphasis as it highlights the moral aspect of expert activity in polygraph testing, which in these days of ethical crisis in forensic sciences is especially material.

The report, as its authors state, is actually a comprehensive and, let us add, highly insightful study of the literature of the subject, conducted using well-defined criteria. Taken into account are both the analyses of results of experiments of laboratory studies and analysis of practical examinations, and – as it turned out – the differences in results acquired in their course are small or at least statistically insignificant, which may come as a surprise for many opponents of the use of the polygraph.

Attention was paid to the fact “that event-specific diagnostics examinations conducted for evidentiary purposes, for which it is expected that the results may be used as evidence in a judiciary proceeding, should be conducted using techniques that produce a criterion accuracy level of .900 or higher, excluding inconclusive, and with an inconclusive rate of .200 or lower. Diagnostic examinations conducted using the paired testing protocol can achieve a very high accuracy rate through the combination of results from examinations conducted with techniques that produce a mean criterion accuracy level of .860 or higher, excluding inconclusive, and with inconclusive rate of .200 or lower. Examinations conducted for investigative purposes should be conducted with techniques that produced a mean criterion accuracy level of .800 or higher, excluding inconclusive, and with inconclusive rate of .200 or lower.” (p. 206).



Furthermore, accounted for were only the analyses that concerned the same study techniques and were disclosed in at least two independent publications, while the analysed material was acquired in line with the requirements of the APA Standards of Practice. Altogether, the meta-analysis covered 38 publications that altogether investigated 3723 examinations, including 2015 corroborated opinions indicating examinee deception (DIs), and 1708 corroborated opinions indicating no examinee deception (NDIs) (p. 213). Compared to similar meta-analyses made in the past, these numbers are impressive and provide a testimony to the fact that the discussed work is a milestone that cannot be disregarded in the development of polygraph examinations.

Technically speaking, the research problems which the report was to find answers to (and did) include:

“1) which PDD examination techniques have published and replicated evidence of validity that satisfies the APA 2012 Standards of Practice requirement for decision accuracy and inconclusive rates

2) what is the overall accuracy of validated PDD techniques interpreted with the assumption of independence among the RQ stimuli

3) what is the accuracy level of PDD techniques interpreted with the assumption of non-independence, among the RQ stimuli

4) are there significant differences or outliers among any of the validated PDD techniques

5) are there any outlier results that are not accounted for by the presently available evidence.” (p. 213).

It is clear that these are elementary questions of the “what is the situation like” type, generally aiming to acquire a description of the phenomena that the researchers find interesting. There is nothing wrong with this “elementary character”; on the contrary, such a corroboration of the full picture of the basic facts serves directly the optimisation of practice and also points to the problems that should be elucidated in future, on the basis of further research.

The core of the report is a discussion of the PDD techniques analysed successively. Thus, the reader may become familiar with the results of studies concerning the following solutions: AMFGQT (interpreted in two variants:

on a seven-point scale, and through ESS); Backster You-Phase; Concealed Information Test; Directed-lie Screening Test (also interpreted on a seven-point scale and through ESS); Federal You-Phase (interpreted analogously); Federal ZCT; Integrated Zone Comparison Technique; Matte Quadri-track Zone Comparison Technique; Utah ZCT – Probable Lie Test; Utah ZCT – Directed Lie Test; Utah ZCT – Canadian Police College/Royal Canadian Mounted Police Version; Utah ZCT – Combined PLT, DLT and RCMP; and the Event Specific ZCT.

Concise information concerning each of the techniques covers its general characteristics, the sources of data covered by the meta-analyses, calculations of standard deviation, and variance analyses (usually the two-way ANOVA), mentioning the potential statistical significance of the results (albeit at different levels of  $p$ ), and – in certain cases – the correlation coefficient specific for the given calculations technique. Every such description is also accompanied by a chart, in a layout “similar” to the Cartesian one, illustrating the results surveyed. A critical remark is due here: these charts are made in a non-professional manner, if not erroneously: in none is the horizontal axis described (and the vertical one is described imprecisely, so that the reader must guess what is being charted), yet the primary error is the use of lines in the charts, which suggest the presence of some form of continuity between the studies examined, which is obviously false. In this case, histograms should have been used for visual illustration.

It is also a pity that the report lacked space for quoting the formats of the discussed PDD methods, even despite the conclusion that they are not the most important (see below), as the volume of the publication would not have increased excessively, while the entire document would have gained significantly in self-sufficiency.

Nevertheless, the analyses quoted are highly interesting, and in certain cases contain comments that are found only sporadically in literature. Such precious remarks include, for example, the portrayal of differences in CIT precision, depending on the calculations accounting only for the diagnoses of people concealing information, and earlier, *tempore criminis*, behaviourally involved in the commitment of the crime, or accounting for the diagnoses of people who – although in the possession of key information – did not participate in the criminal activity. If the data is treated jointly, the precision of the CIT technique drops below a value of .800 (p. 218).

Deserving of a full and separate analysis is Appendix G of the report, which contains information explaining why some of the materials published in the past **could not be used** in the study. The arguments used are highly varied, and include antiquated methods of data interpretation, limiting the interpretation solely to the computer method, lack of statistical aggregation of the results, non-standard order of questions in the tests, failure to account for the results from some channels (e.g. cardio) in the results, the lack of representativeness of the analysed sample, divergence from the standards in the given method, and many others. There are no fewer than 39 materials published earlier (of which number 12 come from the 21st century), that were not accounted for in the report (with each being given the reason for rejection). Possibly, some of the negative decisions are disputable, yet the review of the rejects is certainly **a priceless collection of methodological guidelines** for all those planning and carrying out scientific projects covering empirical studies in polygraph examinations.

The report is complemented with carefully elaborated collections of statistical data used for analysis.

Finally, it is worth quoting the most important recommendations of the report: "Because no significant differences were found among the 14 PDD techniques included in this meta-analysis, no attempt should be made to describe these techniques in terms of a rank order regarding effectiveness. Available evidence does not support any PDD techniques as superior to others. Attempts at establishing any hierarchy of efficacy are therefore unwarranted. Instead, less attention should be given to named PDD techniques and meaningless differences in PDD test formats. More emphasis should be given to test construction details for which there is replicated evidence of their contribution to criterion accuracy. More emphasis should be given to the important practical and decision theoretic differences in PDD techniques for which the RQs are interpreted as independent or non-independent." (p. 257).

The authors also list specific problems which will have to be tackled in the future, mentioning among them the influence of variables including the characteristics of the examinees (juvenile, elderly, psychiatric patients, people with other medical problems), and recommending extensive use of statistical methods for the solution of difficult research problems (p. 257).

Certainly, the *Meta-Analytic Survey...* is an outstanding achievement of the APA analysts, while the authors do not show any semblances of triumphalism,

and the whole report is highly balanced, with the theses well defined and justified. Finally, it can be assumed that the document is evidence of a time in the development of polygraph examinations. If it were to be compared to similar works from previous years,<sup>2</sup> there would be visible progress providing grounds for deep satisfaction to all those dealing with polygraph examinations. Which is why it would be difficult to find more suitable words than those of Pamela Shaw from the Introduction to the report: “We are at a great time in polygraph history and we can be proud of the steps we are taking to move our profession forward. We must all grow with the knowledge in our field and the demands within our field to ensure our future success.”

Jerzy Konieczny\*

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<sup>2</sup> E.g.: N. Ansley (1997), *The Validity and Reliability of Polygraph Testing*, Forensic Research Inc., Severna Park.

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For example (in references):

Reid J., Inbau F. (1966), *Truth and Deception: the Polygraph ("Lie-detector") Techniques*, Williams & Wilkins, Baltimore.

Abrams S. (1973), *Polygraph Validity and Reliability – a Review*, Journal of Forensic Sciences, 18, 4, 313.

and (Reid, Inbau, 1966), (Abrams, 1973) inside text.

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