

Numerical Scoring Systems in the Triad of Matte Polygraph Techniques

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The Matte family of polygraph techniques consist of the Matte Quadri-Track Zone Comparison Technique which is a single-issue test, the Matte Quinque-Track Zone Comparison Technique which is an exploratory multiple-issue test, and the Matte Suspicion-Knowledge-Guilt (S-K-G) test designed to identify the examinee who has major involvement, some direct involvement, or guilty knowledge regarding a specific issue.

The numerical quantification system in the analysis of the physiological data used in the aforementioned triad of Matte polygraph techniques employs the Backster chart interpretation rules (See pages 398-406, Matte 1996), with some minor changes described herein.

To attain an objective measure of the reactions or lack of reaction to each relevant and control question in each of the three tracings (pneumograph, electrodermal, cardiograph), the numerical scoring system designed by Cleve Backster (Backster 1963) is used in the triad of Matte polygraph techniques. This system provides the forensic psychophysicologist (FP) with a means of objectively evaluating each relevant question versus its neighboring control question, hereafter referred to as a spot (control vs. relevant), in each tracing according to chart interpretation rules with penalties for violation of those rules, by the assignment or scoring of each spot with a number from a seven-position scale.

Value

| | |
|-------|-------------------------|
| +3 MT | Maximum Truthful Score |
| +2 T | Truthful Score |
| +1 t | Minimum Truthful Score |
| 0 ? | |
| -1 d | Minimum Deception Score |
| -2 D | Deception Score |
| -3 MD | Maximum Deception Score |

Numbers preceded by a minus sign fall into the deceptive area; numbers preceded by a plus sign fall into the truthful area.

The following are departures from the Backster Rules. Most of these departures were implemented prior to 1980 and all of them were in effect prior to the validity study of the Matte Quadri-Zone Comparison Technique (subsequently renamed Quadri-Track ZCT) published in 1989, with the exception that as a result of this validity study, the threshold or minimum score required to reach a conclusion for the truthful in the Matte Quadri-Track ZCT was reduced from +4 per chart to +3 per chart.

Backster "Either-Or" Rule:

To arrive at an interim spot analysis tracing determination of (+2) or (-2) there must be a significant and timely tracing reaction in either the red zone (relevant) or green zone (control) being compared.

Backster ZCT: If the red zone indicates a lack of reaction, it should be compared with the neighboring green zone containing the larger

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timely reaction. If the red zone indicates a timely and significant reaction it should be compared with the neighboring green zone containing no reaction or the least reaction.

Matte QTZCT: Red Zone is always compared with the green zone question preceding it. the red zone questions are switched in position with each chart conducted, thus are alternately compared against each green zone question. (Matte 1996)

Tracings Included: respiration, electrodermal, and cardiograph.

Backster "Green Zone 'Yes' Answer Penalty Rule:

If a "yes answer is given to a green zone question which is a reversal of the answer given during the pretest question review, that green zone cannot be used as a spot analysis 'presence-of-reaction' zone.

A green zone involving such an answer reversal can be used as a spot analysis "lack-of-reaction" zone where no reaction, or a reaction significantly smaller than the red zone reaction, is indicated.

Backster ZCT: Such use should be avoided if another adjacent lack-of reaction green zone, properly answered, is available.

Matte QTZCT: The forensic psychophysiological cannot jump to another Track to make a comparison. See Figure 3 for Primary, Secondary, and Inside Tracks.

Tracings Included: respiration, electrodermal, and cardiograph.

Backster "Green Zone Abuse" Rule:

If the intensity of a green zone reaction appears to be at least four times as dramatic as a minor reaction in the red zone, it is not proper to feature the minor red zone reaction and compare it with the other neighboring green zone which may show a lesser reaction or no reaction.

Matte QTZCT: This rule does not apply to the Quadri-Track or Quinque-Track ZCT

inasmuch as the FP must compare each red zone question to the preceding green zone question, and cannot jump to another track to make a comparison. (Matte 1996)

Tracings Included: respiration, electrodermal, and cardiograph.

Backster "Question Pacing" Upgrading Rule:

To upgrade a ((+2) or (-2) interim spot analysis rating to a (+3) or (-3) final spot rating each of the two zones being inter-compared must embrace a minimum of twenty seconds and a maximum of thirty-five seconds.

Note: Question pacing is measured from the first word of one question to the first word of the question that follows.

Matte QTZCT: Requires a minimum of twenty-seconds between the answer to a test question to the commencement of the next question that follows it, not to exceed thirty seconds.

Tracings Included: respiration, electrodermal, and cardiograph.

Matte "Dual-Equal Strong Reaction" Rule: An Exception to the Backster's One-to-One Rule.

When the red and green zones being inter-compared both contain timely, specific and significant reactions of maximum and equal strength, a minus one (-1) score is assigned to that spot.

Tracings Included: respiration, electrodermal, and cardiograph.

Note: When there is a presence of mild reaction which would warrant only a minimum score of -/+1 in both the relevant question and its neighboring control question respectively of equal magnitude, such as in Figure 1, where there is no presence of parasympathetic activation (questions 46-33) a numerical value of zero must be assigned to this spot in the respiration tracing. However when there is a presence of strong reaction which would be manifested by distinct

activation of both sympathetic and parasympathetic systems in both zones being inter-compared of equal magnitude (Figure 2), a minimum deception score of -1 must be given to this spot. This rule applies only to the pneumograph and cardiograph tracings, not the electrodermal. The electrodermal tracing is excluded because it is more volatile and sensitive to extraneous stimuli.

The aforesaid rule is based on the premise that both zone questions appear to be equally threatening to the examinee, the

degree of threat being proportionate to the degree of the responses, which indicate that while the examinee may be attempting deception to the relevant question, its neighboring control question may be too intense due to faulty structure, embraces an equally or more serious unknown crime, or a countermeasure attempt was made. A sophisticated guilty examinee may be able to cause a reaction on the control question but cannot control an oncoming reaction to the relevant question.

Figure 1
Equally Mild Reactions

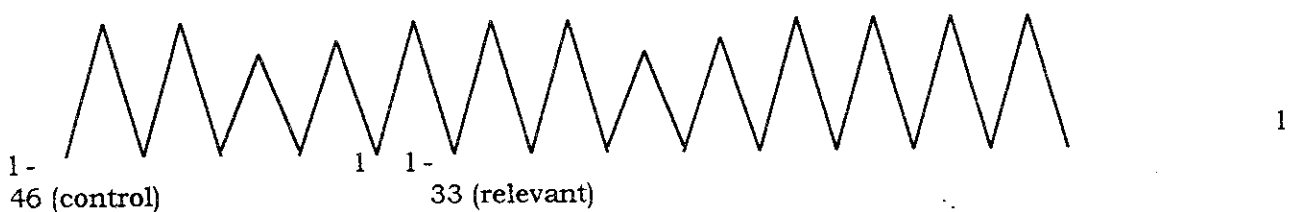


Figure 2
Equally Strong Reactions



Appendix 1 depicts the Matte Quadri-Track Zone Comparison Test structure which shows that the vertical score tallied from spots 1, 2 and 3 are combined for a total score, inasmuch as all spots deal with the same single issue. Appendix 2 depicts the Tri-Spot Quantification System for the Quadri-Track ZCT, and Figure 3 shows the Conclusion Table from which a determination is made as to Truth, Indefinite (Inconclusive),

or Deception from the total scores tallied from spots 1, 2, and 3. It should be noted that in the Matte Quadri-Track Zone Comparison Technique and the Matte Suspicion-Knowledge-Guilt (SKG) tests, a minimum of two polygraph charts (tests) must be conducted to reach a conclusion of truth, deception or inconclusive, and in the Matte Quinque-Track Zone Comparison Technique, a minimum of three polygraph charts must be

conducted to reach a conclusion. This requirement increases external reliability. The American Polygraph Association standards require that a minimum of two charts be conducted to reach a determination

of truth or deception. (See Appendices 1 and 2 for the Matte Quadri-Track Zone Comparison Test Structure and Tri-Spot Quantification System).

Figure 3

| CONCLUSION TABLE | | | | | | | | | | |
|---------------------------------|---|---------------------------------|--|--|-------------|------------|-------------|-------|------------|-----------|
| RESULTS FOR 1 CHART | <table border="1"> <tr> <td colspan="3">CIRCLE APPROPRIATE NUMBER BELOW</td> </tr> <tr> <td>+27 to +3</td> <td>+2 to -4</td> <td>-5 to -27</td> </tr> <tr> <td>TRUTH</td> <td>INDEFINITE</td> <td>DECEPTION</td> </tr> </table> | CIRCLE APPROPRIATE NUMBER BELOW | | | +27 to +3 | +2 to -4 | -5 to -27 | TRUTH | INDEFINITE | DECEPTION |
| CIRCLE APPROPRIATE NUMBER BELOW | | | | | | | | | | |
| +27 to +3 | +2 to -4 | -5 to -27 | | | | | | | | |
| TRUTH | INDEFINITE | DECEPTION | | | | | | | | |
| RESULTS FOR 2 CHARTS | <table border="1"> <tr> <td colspan="3">CIRCLE APPROPRIATE NUMBER BELOW</td> </tr> <tr> <td>+54 to +6</td> <td>+5 to -9</td> <td>-10 to -54</td> </tr> <tr> <td>TRUTH</td> <td>INDEFINITE</td> <td>DECEPTION</td> </tr> </table> | CIRCLE APPROPRIATE NUMBER BELOW | | | +54 to +6 | +5 to -9 | -10 to -54 | TRUTH | INDEFINITE | DECEPTION |
| CIRCLE APPROPRIATE NUMBER BELOW | | | | | | | | | | |
| +54 to +6 | +5 to -9 | -10 to -54 | | | | | | | | |
| TRUTH | INDEFINITE | DECEPTION | | | | | | | | |
| RESULTS FOR 3 CHARTS | <table border="1"> <tr> <td colspan="3">CIRCLE APPROPRIATE NUMBER BELOW</td> </tr> <tr> <td>+81 to +9</td> <td>+8 to -14</td> <td>-15 to -81</td> </tr> <tr> <td>TRUTH</td> <td>INDEFINITE</td> <td>DECEPTION</td> </tr> </table> | CIRCLE APPROPRIATE NUMBER BELOW | | | +81 to +9 | +8 to -14 | -15 to -81 | TRUTH | INDEFINITE | DECEPTION |
| CIRCLE APPROPRIATE NUMBER BELOW | | | | | | | | | | |
| +81 to +9 | +8 to -14 | -15 to -81 | | | | | | | | |
| TRUTH | INDEFINITE | DECEPTION | | | | | | | | |
| RESULTS FOR 4 CHARTS | <table border="1"> <tr> <td colspan="3">CIRCLE APPROPRIATE NUMBER BELOW</td> </tr> <tr> <td>+108 to +12</td> <td>+11 to -19</td> <td>-20 to -108</td> </tr> <tr> <td>TRUTH</td> <td>INDEFINITE</td> <td>DECEPTION</td> </tr> </table> | CIRCLE APPROPRIATE NUMBER BELOW | | | +108 to +12 | +11 to -19 | -20 to -108 | TRUTH | INDEFINITE | DECEPTION |
| CIRCLE APPROPRIATE NUMBER BELOW | | | | | | | | | | |
| +108 to +12 | +11 to -19 | -20 to -108 | | | | | | | | |
| TRUTH | INDEFINITE | DECEPTION | | | | | | | | |

Matte Quinque-Track Zone Comparison Technique:

Appendix 3 shows the Matte Quinque-Track Zone Comparison Technique test structure. The Matte Quinque-Track ZCT is an Exploratory Multiple-Issue test, thus all four spots are vertically and independently scored but cannot be horizontally tallied because each spot deals with a different issue. A minimum of three charts (ideally four) must be conducted to attain a minimum number of comparisons for each spot. Appendix 4 is the Matte Quinque-Track ZCT Quantification system, including its Conclusion Table.

Matte Suspicion-Knowledge-Guilt (SKG) Test:

The Matte Suspicion-Knowledge-Guilt Test, hereafter referred to as the S-K-G test is designed to provide the forensic psychophysicologist with a single test capable of identifying the examinee who has major involvement, some direct involvement, or guilty knowledge, yet containing similar controls to that found in the Matte Quadri-Track Zone Comparison Technique. For detailed information about the SKG test, consult Matte (1996, chapter 17).

Appendix 5 shows the SKG Test structure and quantification system. It should be noted that test question number 31 is treated as a control question. Question number 31, which relates to unfounded suspicion on the part of the examinee, is not a relevant question but rather a control, inasmuch as it can be readily assumed that an examinee who shows no reaction to any of the relevant questions but shows a reaction to suspicion can be excluded as a participant or witness in the crime. Therefore, the forensic psychophysicologist can choose between control question 48, which is a control question which encompasses both periods normally covered by control questions 46 and 47 in the Quadri-Track ZCT, and control question 31 for the greatest physiological evidence of sympathetic and parasympathetic action, which the FP then uses as the control question to compare against relevant questions 42, 34, 33, and 32 individually.

There will be few occasions when question 31 (control) will exceed control question 48 in overall sympathetic/parasympathetic activity. However, its inclusion is necessary to offset the chance that an examinee's suspicion of someone may be so strong that, without the suspicion question

on the test, he or she may show reaction on the knowledge question because there is no

other question in that general category to relieve the energy.

Figure 4 below shows the Comparison Score Table.

Figure 4

Comparison Score Table

| | | | | | |
|-----------|---------------|---------------|---------------|---------------|-----------|
| Relevants | 42 | 34 | 33 | 32 | 24 |
| Controls | <u>48or31</u> | <u>48or31</u> | <u>48or31</u> | <u>48or31</u> | <u>23</u> |
| Tally | (+/-) | (+/-) | (+/-) | (+/-) | (+/-) |

Figure 5 below reflects the SKG Conclusion Table. It should be noted that a minimum of two polygraph charts, as in any

test, must be conducted to insure external reliability, before a determination of truth or deception can be rendered.

Figure 5

S-K-G Conclusion Table

Results For 1 Chart: Circle Appropriate Number Below

| | | |
|------------------|-----------------------|----------------------|
| +2 Or More Truth | +1 To -2 Inconclusive | -3 Or More Deception |
|------------------|-----------------------|----------------------|

Results For 2 Charts: Circle Appropriate Number Below




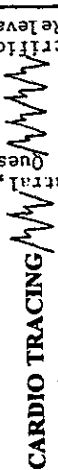


| | | |
|------------------|-----------------------|----------------------|
| +4 Or More Truth | +3 To -5 Inconclusive | -6 Or More Deception |
|------------------|-----------------------|----------------------|

References

- Backster, C. (1963). *Backster Standardized Polygraph Notepack and Technique Guide*. New York: Backster School of Lie Detection.
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Appendix 1

MATTE QUADRI-TRACK ZONE COMPARISON TEST STRUCTURE

| QUESTION NUMBER | PNEUMO TRACING | ELECTRODERMAL (GSR/GSG) TRACING | CARDIO TRACING | OUTSIDE TRACK | | PRIMARY TRACK | | SECONDARY TRACK | | INSIDE TRACK | | OUTSIDE TRACK |
|-----------------|---|---|---|---|--------------------------------------|------------------|--------------------------|------------------|--------------------------|------------------|-------------------|--------------------------------------|
| | | | | YR | B | G | R | G | R | Gw | Rw | |
| 39 |  |  |  | Sacrifice/Preparatory Relevant Question | Symptomatic Question (Outside Issue) | Control Question | Relevant Question | Control Question | Strong Relevant Question | Control Question | Relevant Question | Symptomatic Question (Outside Issue) |
| 14J |  |  |  | Neutral, Irrelevant Question | | Control Question | Strong Relevant Question | Control Question | Strong Relevant Question | Control Question | Relevant Question | |
| 46 | | | | | | 46 | 46 | 47 | 47 | 47 | 47 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | 47 | 47 | 26 |
| 25 | | | | | | 25 | 25 | 25 | 25 | 25 | 25 | 26 |
| 23 | | | | | | 23 | 23 | 23 | 23 | 23 | 23 | 26 |
| 24 | | | | | | 24 | 24 | 24 | 24 | 24 | 24 | 26 |
| 33 | | | | | | 33 | 33 | 33 | 33 | 33 | 33 | 26 |
| 35 | | | | | | 35 | 35 | 35 | 35 | 35 | 35 | 26 |
| 46 | | | | | | 46 | 46 | 46 | 46 | 46 | 46 | 26 |
| 47 | | | | | | 47 | 47 | 47 | 47 | | | |

Appendix 2

Matte Quadri-Track Zone Comparison Test

Tri-Spot Quantification System

| | SPOT ONE | | | SPOT TWO | | | SPOT THREE | | |
|------------------|----------|---------|--------|----------|--------|-------|------------|-------|--------|
| | TRUTH | INDEF | DECEP | TRUTH | INDEF | DECEP | TRUTH | INDEF | DECEP |
| SPEC-1 | | | | | | | | | |
| PNE(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| GSR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| CAR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| SPEC-2 | | | | | | | | | |
| PNE(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| GSR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| CAR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| SPEC-3 | | | | | | | | | |
| PNE(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| GSR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| CAR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| SPEC-4 | | | | | | | | | |
| PNE(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| GSR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| CAR(33) | +3 +2 | +1 0 -1 | -2 -3 | () | (35) | () | () | (24) | () |
| TARGET () | TOTAL: | () | TOTAL: | () | TOTAL: | () | TOTAL: | () | TOTAL: |
| GRAND TOTAL: () | | | | | | | | | |
| FOR () CHARTS. | | | | | | | | | |

Appendix 3

MATTE QUINQUE-TRACK ZONE COMPARISON TEST STRUCTURE
(EXPLORATORY)

| PNEUMO TRACING | ELECTRODERMAL (GSR/GSG) TRACING | CARDIO TRACING | QUESTION NUMBER | OUTSIDE TRACK | FIRST TRACK | | | | SECOND TRACK | | | | THIRD TRACK | | | | FOURTH TRACK | | | | OUTSIDE TRACK | | |
|---------------------|---------------------------------|----------------|-----------------|--------------------------------------|------------------------|--|-------------------|--------------------------|------------------------|---|-------------------|-------------------------|------------------------|-------------------------|-------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|--------------------------------------|---------------|-------------------------|--|
| | | | | | Non-Current, Exclusive | | Relevant Question | | Non-Current, Exclusive | | Relevant Question | | Non-Current, Exclusive | | Relevant Question | | Suspicion - Control Question | | Knowledge - Relevant Question | | | | |
| | | | | Symptomatic Question (Outside Issue) | | Sacrillice/Preparatory Relevant Question | | Relevant Question | | Relevant Question | | Relevant Question | | Relevant Question | | Suspicion - Control Question | | Knowledge - Relevant Question | | Symptomatic Question (Outside Issue) | | | |
| | | | | 25 | | 39 | | 46 | | 45J | | 47 | | 45K | | 48 | | 031 | | 032 | | 26 | |
| | | | | B | | YR | | G R | | G R | | G R | | G R | | G R | | G R | | B | | B | |
| TRI-ZONE COMPARISON | | | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | | ZONE | |
| COLOR LEGEND: | | | | 1. Black (Symptomatic) | | 2. Green (Exclusive Control) | | 3. Red (Strong Relevant) | | TRACK Identifies a pair of questions related for comparison (G&R Zone) or evaluation (B Zone) | | SPOT ONE ANALYSIS SCORE | | SPOT TWO ANALYSIS SCORE | | SPOT THREE ANALYSIS SCORE | | SPOT FOUR ANALYSIS SCORE | | SPOT ONE ANALYSIS SCORE | | SPOT TWO ANALYSIS SCORE | |
| | | | | + | | + | | + | | + | | + | | + | | + | | + | | + | | + | |

(Cannot jump track to make comparison)

SPOT Identifies a Track which is quantified.

ABOVE FOUR SPOTS ARE VERTICALLY AND INDEPENDENTLY SCORED BUT CANNOT BE HORIZONTALLY SCORED FOR A TOTAL TALLY BECAUSE EACH SPOT DEALS WITH A DIFFERENT ISSUE. A MINIMUM OF THREE CHARTS (IDEALLY FOUR) MUST BE CONDUCTED TO ATTAIN A MINIMUM NUMBER OF COMPARISONS FOR EACH SPOT.

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Appendix 4

MATTE QUINQUE-TRACK ZONE COMPARISON TECHNIQUE

| TARGET () | | USED ON CHART NR. | |
|------------|---|--|---------------------|
| 14J | WERE YOU BORN IN THE U.S.? | 13L (Last Name) | 13F (First Name) |
| 39 | RE: WHETHER OR NOT (YOURSELF) | DO YOU INTEND TO ANSWER TRUTHFULLY EACH QUESTION ABOUT THAT? | |
| 25 | ARE YOU COMPLETELY CONVINCED THAT I WILL NOT ASK YOU AN UNREVIEWED QUESTION DURING THIS CHART? | | |
| 46 | BETWEEN THE AGES OF () AND () - DO YOU REMEMBER: | | |
| 45J | | | |
| 47 | DURING THE FIRST () YEARS OF YOUR LIFE - DO YOU REMEMBER: | | |
| 45K | | | |
| 48 | DURING THE FIRST () YEARS OF YOUR LIFE - DO YOU REMEMBER: | | |
| 45L | | | |
| 031 | | | |
| 032 | | | |
| 26 | IS THERE SOMETHING ELSE YOU ARE AFRAID I WILL ASK YOU A QUESTION ABOUT, EVEN THOUGH I TOLD YOU I WOULD NOT? | | |

QUANTIFICATION SYSTEM
QUINQUE-TRACK ZONE COMPARISON TECHNIQUE

| CHART1 | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | |
|------------|-----------|--------|---------|--|-----------|-------|--------|---------|-----------|-------|--------|---------|-----------|-------|--------|---------|
| PO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| GR 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| CO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| CHART2 | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | |
| PO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| GR 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| CO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| CHART3 | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | | TI | INDEF | DI | |
| PO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| GR 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| CO 45J | +3+2 | +1 0-1 | -2-3() | | 45K | +3+2 | +1 0-1 | -2-3() | 45L | +3+2 | +1 0-1 | -2-3() | 32 | +3+2 | +1 0-1 | -2-3() |
| TARGET () | TOTAL () | | | | TOTAL () | | | | TOTAL () | | | | TOTAL () | | | |

CONCLUSION TABLE

| | NDI | INCL | DI | 45J | 45K | 45L | 032 |
|--------------|-----------|-----------|------------|-----|-----|-----|-----|
| THREE CHARTS | +27 to +5 | +4 to -7 | -8 to -27 | () | () | () | () |
| FOUR CHARTS | +36 to +7 | +6 to -9 | -10 to -36 | () | () | () | () |
| FIVE CHARTS | +45 to +9 | +8 to -11 | -11 to -45 | () | () | () | () |

Each of the 4 SPOTS (45 series and 032) are scored, tallied and evaluated separately against the Conclusion Table according to the number of charts conducted.

STIMULATION TEST DATA - NUMBER SELECTED: _____ CHART NR: _____

Appendix 5

| S-K-G Test | 13L | Used on Chart Nr. |
|------------|--|--|
| 25 | Are you completely convinced that I will not ask you an unreviewed question during this chart? | |
| 39 | Regarding the: | Do you intend to answer truthfully each question about that? |
| 42 | Same as above | Before that _____ occurred - Did you definitely know it was about to happen? |
| 34 | Same as above | At the very time that _____ occurred - were you _____ (on the scene) |
| 48 | During the first () years of your life - Do you remember: | |
| 33 | Same as above | Did you (yourself) |
| 32 | Same as above | Do you know for sure (who) |
| 31 | Same as above | Do you suspect anyone in particular of |
| 23 | Are you afraid an error will be made on this test regarding: (whether or not you were involved in this crime) | |
| 24 | Are you hopeful an error will be made on this test regarding: (whether or not you were involved in this crime) | |
| 26 | Is there something else you are afraid I will ask you a question about, even though I told you I would not? | |

S-K-G QUANTIFICATION SYSTEM SCORE TABLE

| SKG-1 | | | | |
|------------------|--------------|--------------|--------------|--------------|
| PNE 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| GSR 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| CAR 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| SKG-2 | | | | |
| PNE 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| GSR 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| CAR 42 Score () | 34 Score () | 33 Score () | 32 Score () | 24 Score () |
| 42 Total () | 34 Total () | 33 Total () | 32 Total () | 24 Total () |

S-K-G CONCLUSION TABLE

| | | | |
|-----------------------|--|--------------|------------|
| RESULTS FOR 1 CHART: | TRUTH | INCONCLUSIVE | DECEPTION |
| | +2 or more | +1 to -2 | -3 or more |
| RESULTS FOR 2 CHARTS: | TRUTH | INCONCLUSIVE | DECEPTION |
| | +4 or more | +3 to -5 | -6 or more |
| S-K-G CONCLUSIONS: | TRUTHFUL to relevant question(s) _____ | | |
| | DECEPTIVE to relevant question(s) _____ | | |
| TARGET () | INCONCLUSIVE to relevant question(s) _____ | | |