

## BOOK REVIEW

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### A Review of *The Art and Science of the Polygraph Technique*

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**REFERENCE:** Matte, J. A., *The Art and Science of the Polygraph Technique*. Charles C Thomas, Publisher, Springfield, Ill., 1980, 282 pages, appendix with model forms, \$29.50.

This book was written by a polygraphist trained in and primarily influenced by the specific polygraph concepts, doctrine, and techniques taught by Cleve Backster at the Backster School of Lie Detection. The author also places heavy emphasis on a study, "Validity and Reliability of Detection of Deception," prepared for the Law Enforcement Assistance Administration by Drs. Raskin, Barland, and Podlesney of the Department of Psychology at the University of Utah in 1976.

There are some minor errors of fact in the book as well as some strongly held personal opinions of the author that would be heatedly disputed by many polygraphists who are at least as qualified as he. For example, in describing the autonomic nervous system, the author states that "the brain consumes more than 75 percent of the total oxygen intake of the body," when the actual figure is somewhere in the neighborhood of 25 percent. He repeatedly states that the relevant/irrelevant test question technique is obsolete and should not be used. This will come as a surprise to the Keeler Polygraph School in Chicago and to those (such as the National Security Agency and the Central Intelligence Agency) who use it successfully on a daily basis during pre-employment and security screening examinations. It is a technique that requires specific training and experience to develop, but in the hands of one who is competent in the technique, it is effective. Sometimes it is the only technique that can be used, for example, during a polygraph examination of a person who is thoroughly familiar with the control question technique, such as another polygraphist. The author also states that quantification (numerical) analysis was adopted by the Federal Polygraph School at Fort Gordon, Georgia (now at Fort McClellan, Alabama) in the early 1970s. In fact, numerical analysis of the Zone of Comparison Test was taught at the Federal School starting in 1961. A numerical analysis technique was developed for the Modified General Questions Test in 1967.

The author cites from the University of Utah study a statement that the "electronic, low pressure cardiograph offered a superior performance by reducing subject discomfort and allowing a slower rate of question presentation (20 to 25 seconds between questions) than the mechanical cardiograph, which is a high pressure system." This statement is somewhat misleading in that the "low pressure" referred to in the study is about 70 mm Hg, which is not much lower than would normally be required with a mechanical cardiograph. Later in the

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book the author advises that "a minimum of 60 mm Hg of pressure is still required in most cases to obtain an efficient tracing and valid, reliable results."

In discussing chart analysis techniques and principles, the author emphatically advises that "a response occurring five seconds or more after the examinee's answer but not during the question or answer must be disregarded as an attempt at deception to that particular question." While this is generally true, particularly when such appears to be a random or isolated response, it is not always true. Occasionally a polygraphist will run into an examinee who is a consistently late responder, usually because he is on the lower end of the intelligence scale.

Exception is also taken to the author's contention that control questions must go back at least two years from the date of the issues to be covered by the relevant questions. This is neither necessary nor in many cases is it desirable. Control questions may be clearly separated from relevant questions by time (usually a year is sufficient), by geographical distinctions, or by other factors that depend on the specific testing situation. The main point should be to clearly separate the relevant from the control questions and to establish the examinee's psychological set accordingly.

The author is also emphatic in his contention that polygraph charts should never be interpreted ("diagnosed") in the presence of the examinee, that the polygraphist should leave the examination room to diagnose his charts. Many polygraphists, this reviewer included, feel just as strongly that the polygraphist should not leave the room because to do so frequently weakens the rapport that should have been built up to that point. Further, it may cause some examinees to doubt the polygraphist's confidence in the results. In most specific testing situations the polygraphist should be able to rapidly interpret the charts to determine truth or deception. In those cases where the responses are not clear-cut, it usually impresses the examinee to see the polygraphist "scientifically" evaluate his charts. If the responses between the relevant and control questions are so close as to require an unusual amount of time to evaluate them, then they are probably inconclusive and a new test should be scheduled.

The author makes a blanket statement that "in addition to those police polygraphists who use an obsolete technique (the relevant/irrelevant), others have had no formal training but simply had on-the-job training from their predecessor, whose own training may have been no more than such an apprenticeship. Such polygraphists are no more than interrogators who use the polygraph instrument as a lever or psychological rubber hose to elicit a confession." There is some truth in this statement and to the extent that it exists it should be corrected. But it must also be remembered that some of the most competent polygraphists in this country were trained on-the-job, not the least of whom was Leonarde Keeler, the man generally regarded as the father of polygraphy as we know it today. While this reviewer agrees with the importance of formal education and training, it should also be recognized that there are those who have gained considerable polygraph expertise in less formal fashion.

Of special interest to many polygraphists will be some new test question construction techniques developed by the author. Expanding on the basic Backster Zone of Comparison Technique, the author has developed the Quadri-Zone Comparison Technique, the Control Question Validation Procedure, the Quinque Zone of Comparison Technique, and the Suspicion-Knowledge-Guilt Test. He has also developed a rather unorthodox technique for the Known Solution Peak of Tension Test. Of all these techniques, the Quadri-Zone appears to hold the most promise.

As the name implies, the Quadri-Zone requires the addition of a fourth zone to the Backster Zone of Comparison Test, which normally has three zones. The fourth zone has been designed to identify "inside issues" and consists of two questions: "Are you afraid an error will be made on this test regarding (whatever the issue is)?" and "Are you hopeful an error will be made on this test regarding (whatever the relevant issue is)?" The first question is the "fear of error" question and is designed to serve as a control. A significant response to this question when there are significant responses to the relevant questions on the test may signal that the remaining control questions are weak or ineffective and remedial action is prescribed.

The second question (Are you hopeful an error . . .?) is the "resignation" question and is treated as relevant. The two questions are numerically evaluated against each other and, according to the author, may help to resolve an otherwise inconclusive test. Although the technique has been validated only by its author it appears to merit serious consideration.

In the Control Question Validation Procedure, the author suggests conducting what is essentially a guilt complex test employing a fictitious crime as the first test series during the examination procedure to verify that his control questions are working properly. He then uses the same control questions in his subsequent testing of the actual issues. This may have some merit, but it also encompasses the danger that any question may lose its impact on the examinee if he hears it too often.

The Quinque-Zone Comparison Technique is essentially an exploratory test that adds an additional relevant and an additional control question to his Quadri-Zone Technique. The Suspicion-Knowledge-Guilt Test is a variation of the Backster SKY Test.

In his Known Solution Peak of Tension Test, the author advocates using a fictitious key question, usually the Number 2 question, which he reinforces by looking the examinee in the eye and accentuating that particular question. Although he reviews the question with the examinee, he does not let the examinee know the order in which the questions will be asked during testing. Although this technique may work well for the author, it is not standard polygraph technique for known solution peak of tension tests. Standard peak of tension testing requires that the examinee know the exact order in which the questions will be asked and all questions are reviewed and asked in the same tone of voice. Many polygraphists hang the test question list on the wall in front of the examinee to increase the tension in a deceptive subject.

Despite the errors of fact and differences of opinion cited by this reviewer, *The Art and Science of the Polygraph Technique* contains a good deal of useful information and is thought-provoking. The book provides a relatively brief but good review of the development of polygraph instrumentation and techniques as well as the psychological and physiological bases for the polygraph technique. The author explains in clear terms legal issues affecting the polygraph, including a well-reasoned argument for extension of the attorney-client privileged communication relationship to polygraphists who conduct examinations for defense attorneys. He also makes persuasive arguments for state licensing of polygraphists, for expanded use of the polygraph by business and industry, and for judicial recognition of the polygraph technique.

Except for the fact that some of the author's opinions appear to be unreasonably biased and the only polygraph techniques discussed and developed at length are his own, this would have been a good basic text for the novice polygraphist. Nevertheless, some of the ideas he puts forth are worthy of consideration by all polygraphists. The book is decidedly oriented toward the conduct of polygraph examinations for defense counsels and offers them sound advice concerning the selection of polygraphists for defense work and methods for attempting to discredit the testimony of polygraphists who may testify for the prosecution. In view of the fact that the polygraph technique has been making significant progress in gaining judicial acceptance, it behooves all polygraphists to be aware of the contents of this book. Notwithstanding the few errors of fact and some of the author's dogmatic opinions, this book is recommended reading for anyone with a serious interest in the polygraph profession.