Polygraph

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A TRIBUTE

TO

JOHN E. REID

AUGUST 16, 1910 - JANUARY 11, 1982

By

Fred E. Inbau
Professor of Law Emeritus,
Northwestern University

John E. Reid did not invent the Polygraph, nor was he the first person to use it as a so-called "lie-detector," but he did make a massive contribution to the development of what we now know as the Polygraph technique for the detection of deception. He did not originate the psychological techniques for the interrogation of criminal suspects, yet he vastly improved the ones that were in existence, and he added others during his long professional career.

At the end of forty years of dedicated effort, John E. Reid may rightly be acclaimed, in my opinion, as the most skillful Polygraph examiner and criminal interrogator of all times. He was also a very effective instructor of both skills.

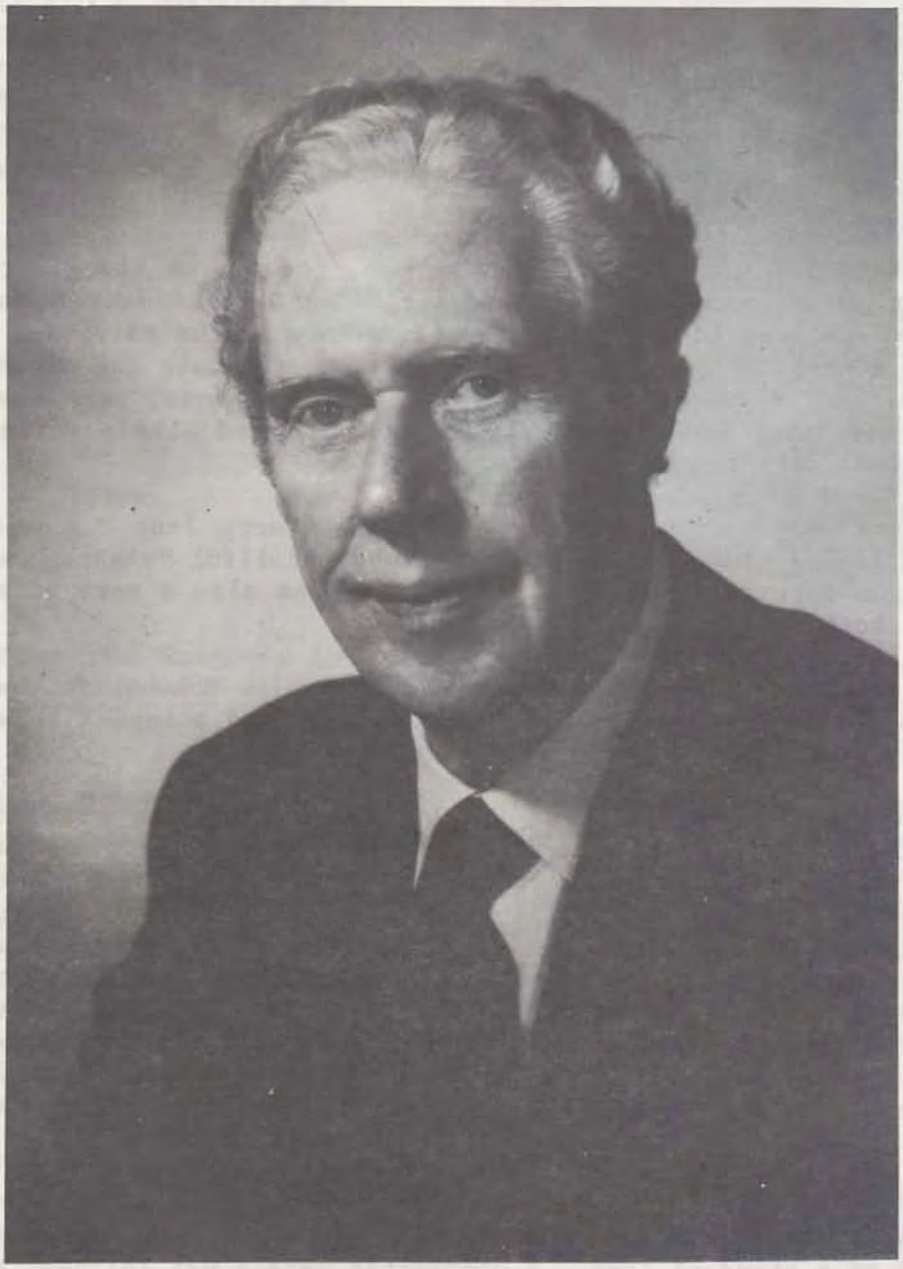
To lend substance to what has been said, and also to what follows, an identification is required of my long professional and personal relationship with Reid.

Upon the transfer, in 1938, of Northwestern University's Scientific Crime Detection Laboratory to the Chicago Police Department, and my appointment as its Director, the recruitment of new staff members became vitally necessary. No one was available to us with the scientific or educational qualifications which we deemed essential, so an intensive search was made for young college graduates with the potential and the interest toward the development of the required expertise. We decided to establish a training program whereby they could receive instruction from the experts already on the staff, as well as a few from without. Our library was an additional resource. We knew, of course, this would take time, but the rewards for the wait and efforts were forthcoming.

The young man chosen for document examination became and remains, as a private practitioner, one of the country's foremost document examiners, and an author of a standard text. A comparable career was followed by the young man selected for firearms identification and comparative micrography; he later directed several of the country's largest criminalistics laboratories and subsequently became a faculty member at several universities. Why have I mentioned all this? Simply to illustrate the precautions we took and the confidence we had when we selected John E. Reid, then a Chicago police officer, for training as a Polygraph examiner.

Reid had joined the police force in 1936 out of economic necessity,

In Memoriam



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despite the fact he had acquired a law degree. Not long thereafter, however, he realized that patrolling a beat in police uniform was far from challenging and that his future as a police officer was not a promising one. He decided to resign, but before he did he thought he should inquire into the possibility of becoming associated with the police department's relatively new scientific crime detection laboratory, so he requested and obtained permission from the Commissioner of Police to seek an interview at the lab. Although we had rejected a number of Chicago police applicants for various lab positions, when Reid came in it was immediately apparent that he had the basic qualifications, the potential, and the genuine interest for training as a Polygraph examiner. He was offered the position immediately. The year was 1940.

As with the two other trainees already mentioned, Reid was a quick learner. Within several months he was conducting tests in important cases. Those were the days when the "relevant-irrelevant" test was being used, and a "card test" served a "control" purpose. It was not long after he had been conducting tests on his own that Reid sensed the inadequacy of the methods that were being used. We talked this over and he was encouraged to try out his own ideas. Shortly thereafter I left the laboratory, having fullfilled my commitment to the University and to the Police Department to supervise its reorganization. Reid continued on, but in 1947 he decided to leave and establish his own Polygraph testing service. Money was not the prime consideration. What he particularly wanted was the opportunity to experiment with and put into practice the ideas he had been developing. His move was not without risk, because of the financial obligations he had to assume. Success did come, however, on both levels.

In 1945, while still at the police laboratory, Reid wrote and published an article entitled, "Simulated Blood Pressure Responses in Lie-Detection Tests and a Method for Their Detection."[1] He had observed that muscular pressures were accountable for many responses that were mistakenly being considered as deceptive responses. He devised a unit for recording such movements during regular Polygraph tests. Then, in 1947, he published his article "A Revised Questioning Technique in Lie-Detection Tests," in which a fictitious crime question was used for "control" purposes.[2] The "card test" continued to be used, but for stimulating fear of detection during the tests rather than for control purposes. Furthermore, even while at the Crime Laboratory, Reid had concluded that the only satisfactory control questions was one unrelated to the matter under investigation but of a similar, though less serious nature, and yet one to which the subject would in all probability lie, or at least there would be concern on his part as to its truthfulness or acccuracy. The technique of using it was described in the 1948 second edition of my book, Lie-Detection and Criminal Interrogation, in the preparation of which Reid was very helpful, as acknowledged in the book's preface.[3]

As a third edition of Lie-Detection and Criminal Interrogation became necessary, I realized that my departure from the field of conducting Polygraph examinations (to practice and to teach law), coupled with the fine work and research that Reid had been conducting, fully warranted an invitation to him to join me as co-author. The result was the joint authorship of the third edition in 1953. Several years later it became apparent that the two subjects covered in the book could no longer be confined to a single publication, so we decided to divide the book into two separate

ones. Moreover, it was clear to us that the title of one of them should more accurately reflect the true nature of the subject matter. No longer should examiners be relying upon a "lie-detector" instrument, but rather upon a technique for the detection of deception. The new book, therefore, became Truth and Deception: The Polygraph ("Lie-Detector") Technique. Then, too, in view of Reid's far more extensive involvement in the field and his far greater contributions to the advancement of the technique, Reid was listed as the first of the two named authors. The book was published in 1966, and a second edition followed in 1977. A third, with Reid's name remaining as senior author, is expected to be completed by 1984.

Over a period of many years, a considerable number of persons received training as Polygraph examiners at the laboratories of John E. Reid and Associates. The only ones accepted as trainees were those with college degrees who also possessed appropriate personality characteristics, and who agreed to devote six months to receiving instruction and individualized training in actual case situations under the supervision of experienced staff examiners. Until Reid's health began to fail several years ago, he was personally involved in the training process. Fortunately, he has left a legacy of exceedingly well qualified personnel to continue that activity, as well as the service to clients seeking assistance in Polygraph testing in case investigations.

Always of deep concern to Reid was the generally prevailing notion that practically anyone could become a Polygraph expert by learning how to operate the "lie-detector machine" and to be able to ask a series of relevant-irrelevant questions. The "training" needed only a very short period of time. In seeking to remedy this regrettable situation, Reid conceived the idea of having state laws enacted which would require that Polygraph examiners be licensed and that certain minimal qualifications should be prescribed. He and his associates drafted the first such licensing bill, the one now law in Illinois, which has served as a model for those in some other states.

Not long after Reid had established his own laboratory, he embarked upon a project of developing a "paper and pencil test" to screen applicants for employment with respect to their proclivity to commit theft. After years of experimentation there evolved the Reid Report/Reid Survey, the one for testing applicants and the other for employees. That service is now known as the Reid Psychological Systems. Last year, in 1981, over 250,000 such tests were administered.

As an interrogator of criminal suspects, Reid was not content to merely use the presently employed interrogation techniques. Just as with Polygraph examinations, he realized that there could be improvements and he set about to develop them. In this respect, too, Reid infused some of his ideas into the second edition of my previously mentioned book, and more so into the third edition in which, as already stated, his named appeared as co-author. Our joint efforts ultimately culminated in the second one of two separate books, this one devoted exclusively to Criminal Interrogation and Confessions. It was published in 1962, with the authors listed respectively as Inbau and Reid. Then followed a second edition, 1967, which was made necessary by the 1966 decision of the United States Supreme Court in Miranda v. Arizona. Although every one of the techniques

in the earlier edition conformed to the then existing law, the new requirement of Miranda warnings had to be inserted, and there was one highly effective technique that had to be deleted--the one by which a suspect could be "talked out" of his interest in remaining silent. The Court had decreed that since a custodial suspect had to be advised of his right to remain silent it was improper to attempt to change his mind. Then, in 1974, a few relatively minor changes were inserted into a reprint run of the book without the necessity of publishing a new edition.

A third edition of Criminal Interrogation and Confessions will appear in the latter part of 1982. Unfortunately, illness limited Reid's participation to the planning stage and to some of the manuscript of the earlier portion. His thoughts, however, will be perpetuated in the forthcoming edition. Moreover, they will be transmitted to the attendants at the seminars on interrogation conducted by John E. Reid and Associates on a regular basis in Chicago and regionally in various parts of the United States and Canada.

Thus far I have written about John E. Reid the professional; now a few words about the man himself.

Reid and I were the closest of friends for almost forty years. Many were the occasions when one of us needed help from the other. It was always forthcoming.

Reid was an honest man throughout his professional career, and he had the ability of evidencing that honesty without being offensive, which may seem like a rather strange way of describing one's honesty. I recall in particular one experience Reid encountered shortly after he established his own business in 1947. A prominent lawyer-politician attempted to pay Reid off for a favorable Polygraph report on his client. The matter was not a governmental one; it just happened that the client's lawyer was a politician with a lot of "clout." Reid could have become very irate about this, but he calmly shoved the tendered money back across his desk and said his negative report would stay as it was. The individual was never identified to me, nor was I interested in knowing. There also were a few other incidents of this nature during Reid's early professional career, but soon there were no more--or, at most, perhaps a very few. Reason? As Reid said to me, after the few early encounters word went out that "This Reid guy is an on-the-square S.O.B." Reid viewed this as a high compliment, and I agreed. It also discouraged future attempts to buy him off.

Another attribute of Reid's that is worth noting at this point was his great respect for confidentiality, irrespective of whether the confidence was reposed by the police or defense counsel, or by anyone else.

John Reid was a friendly man, and also a kind and considerate one. This may seem odd to some persons who knew of his being a master interrogator of criminal suspects, one who could obtain thousands of confessions from crimnal offenders, including over three hundred killers, which confessions, of course might result in severe punishment. But this is precisely one of the reasons for Reid's tremendous success. He could sit down alone with a brutal murderer, an arsonist, or a child rapist and not display any hatred toward that person; indeed, he had none, regardless of his own professional appraisal of the offender. That lack of hatred, and

an understanding of the frailty of human beings, would become apparent to the suspect, and it became easier for him to confess to Reid rather than to someone else exhibiting feelings of hate or disgust.

Reid never physically abused or threatened to abuse a suspect, nor did he ever use interrogation techniques that were apt to induce innocent persons to confess. It was not his nature, and he did not have to be told of the legal prohibition against such practices.

Another indication of Reid's friendly nature was a unique gesture he used upon being introduced to a person whom he knew he liked or would like. As his right hand gripped the other person's right hand he would lightly grasp with his left hand that person's arm between elbow and wrist. It was as if his left hand electronically uttered "I like you fellow!"

Reid was a man thoroughly dedicated to his profession. He insisted upon high quality in examiner training and subject testing. He also admonished all trainees and staff members that their primary obligation in any given case situation was to the person being tested. Unless the examiner felt confident of his diagnosis the report should be an indefinite one; moreover, if error occurred it should be admitted. And in the course of interrogations, nothing should be said or done that might provoke a confession from an innocent person.

In closing this tribute, as an academic I might say of John "Ave Atque Vale," but he would not have liked it, nor would I, so let it be the clear yet heartfelt equivalent "Hail and Farewell."

[1] 36 J. Crim. L. & Crimonology 201 (1945).

[2] 37 J. Crim. L. & Criminology 542 (1947).

[3] P. 15. The first edition appeared in 1942.

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EDITOR'S NOTE

This issue of Polygraph is devoted to the works of John E. Reid. Although John is widely known for books on the polygraph and books on interrogation, co-authored with Professor Fred E. Inbau; many of John's published articles have also had a significant influence on the development of polygraph technique and in the advancement of the polygraph profession. In this issue we are reprinting several of his most important papers; and publishing for the first time a number of papers which heretofore have had very limited distribution.

We are grateful to Professor Fred E. Inbau for writing the tribute to John E. Reid. We also appreciate Editor Inbau's kindness in allowing Polygraph to reprint articles from the Journal of Criminal Law And Criminology. We extend our thanks to Dr. Frank S. Horvath, George W. Harman, Richard O. Arther, and Philip A. Mullenix for allowing us to reprint articles which they co-authored with John E. Reid.

THE DIAGNOSTIC EXAMINER
THE LIFE AND BREATH OF THE POLYGRAPH

By

John E. Reid

The detection of deception is as old as civilization itself. As soon as rules were imposed to regulate an orderly society, breaches of the rules inevitably occurred. When a suspected offender, in response to an accusation, denied breaking a rule, it was necessary to select a respected person in a high position to act as an arbitrator to decide who was telling the truth. The successor to the original arbitrator is the present day judge who attempts to decide from the evidence presented which of the opposing sides should prevail.

Approximately 80% of the evidence offered in a controversy is based upon the spoken word, and the decision rests in any controversy on the opinion of the judge (or a jury) as to which of the witnesses are telling the truth. Much of the ultimate decision will be based upon his observations of the defendant while testifying, as well as upon the testimony of other supporting or opposing witnesses. The demeanor of witnesses while testifying, such as their manner of speaking, facial expressions, and physical reactions, are critically observed for the purpose of evaluating truthfulness or deception.

Today the Polygraph ("Lie-Detector") Examiner must also decide whether suspected or accused persons are telling the truth. Somewhat similar to the observations and evaluations of a judge (or a jury), the polygraph examiner will consider a suspect's behavior prior to the test, and then later use those behavioral observations as a check upon the diagnosis to be made from the polygraph recordings. He will not rely solely upon his analysis of those recordings.

Throughout the long line of appellate court decisions regarding the issues of the admissibility of polygraph test results, in a vast majority of the cases the emphasis seems to be upon the instrument itself and the recordings it produces. In some of the cases reference is made to the fact that the instrument itself "cannot be cross-examined." Of course not, for the simple reason that the accuracy of an examiner's opinion depends not upon the "validity" of the polygraph instrument alone, but rather upon the qualifications of the examiner, the testing technique used, and his utilization of observations of the behavior of the person being tested. Most certainly, the latter is not the dominant factor, but one that is of indispensable value, primarily as a check upon the interpretations indicated by the polygraph recordings themselves.

Although the polygraph itself is a fine, precision instrument that accurately records the suspect's blood pressure, pulse and respiration, the basic parameters used in instrumental lie detection, it is fundamentally a medical instrument that has no direct relationship to detecting lies until a questioning technique is applied by the examiner. When a

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suspect lies to an incriminating question, his emotions are stimulated to produce a change in those previously mentioned parameters. These changes in blood pressure and respiration are recorded in ink on a motor driven chart. However, regardless of how accurately the instrument records the physiological changes in deception, the polygraph is incapable, by itself, of automatically detecting lies.

The most important role in the detection of deception process is performed by the diagnostic examiner who gathers the pertinent information, arranges it for presentation, formulates and asks the questions, eliminates the honest uncertainties due to misunderstandings, and directs the suspect's performance from the beginning to end.

The competent qualified diagnostic examiner is actually the lie detector; the polygraph instrument is only the recording device.

Before describing the importance of the diagnostic polygraph examiner, it is appropriate to identify the required basic examiner qualifications. First of all, he must be an intelligent person with a good educational background - preferably a college degree. He must be endowed, of course, with adequate motor skills to manipulate the instrument controls while periodically observing the suspect's physical appearance and stressful concerns so that he can make the necessary test adjustments. When being considered as a trainee the applicant himself should be submitted to a polygraph examination in order to verify his own honesty and fitness of character before being entrusted to judge other polygraph subjects on their merits. He should receive training in the Control Question Technique, under the guidance of a competent experienced examiner who has a sufficient volume of actual cases to permit the student examiner to make frequent observations of polygraph tests. He should also be required to examine a considerable number of test records in verified cases.

During the first half of the course the student will undergo classroom instruction in the complete polygraph technique, including an intensive study of the behavioral symptoms of both the truthful as well as untruthful suspects. Along with this, of course, the student should have read and received instruction in the pertinent phases of psychology, physiology, and law as they relate to the polygraph technique and the expertise of the examiner. The second half of the training should be devoted to interpersonal supervision of an experienced, qualified examiner. The minimum training time is approximately six months.

After the formal training is completed and the examiner is certified, he must subsequently devote the major portion of his vocational time to polygraph testing and the refinement of his own procedures. It is highly recommended that an examiner should engage in the actual testing process on a continuing full-time basis in order to avoid any possibility of inactivity diminishing his newly acquired skills. As in any profession, unless one consistently practices and sharpens his techniques, that person's skills will likely become impaired regardless of the high quality education which he may have initially received. His work as an examiner should not be combined with any other scientific examination responsibilities.

An analogy may be drawn between the function of a polygraph examiner in the testing of a suspect and the function of a medical doctor in

diagnosing a patient's illness. Typically, when a person experiences a physical problem he or she will initially relate the manifestations of the illness in an objective fashion to the doctor. Thereafter, the physician will analyze that information and consider the possible causes. By the same token, a polygraph examiner will initially assess the fact of a criminal incident and consider objectively the suspect's relationship to that event.

At the time of his appointment, a physician will observe the patient for physical symptoms of the underlying malady. Similarly a polygraph examiner will observe his suspect in the same manner for behavioral symptoms characteristics of either truthfulness, or deception.

When the physician arrives at the point of measuring his patient's physiological functions, he will employ mechanical devices such as blood pressure instruments or electrocardiograms to record internal manifestations of the illness. When the polygraph examiner begins his examination of a suspect's physiological functions in response to incriminating questions, he, too, employs a mechnical device (The Polygraph) to record the internal emotional manifestations of truthfulness or deception.

Finally, we arrive at the most critical phase. To this point in both instances there exists mechanical evidence of either the patient's illness or the suspect's deception. But if the instrumental evidence appears contrary to the original diagnosis it may require further investigation as to its accuracy. Hence, in the case of the physician it is his own capabilities, i.e., the original diagnosis coupled with the instrumental assurances, which will determine whether his patient's illness is diagnosed correctly. If a disagreement is indicated between the diagnosis and the medical tests, it may be necessary to hospitalize the patient for further exploratory tests. The polygraph examiner may also have to conduct additional tests.

It is the examiner's own capabilities, his study of the behavioral observations, along with the polygraph indications which will determine whether the suspect's truthfulness or deception is accurately identified. In the case of the physician, as well as the polygraph examiner, if the original diagnosis conforms to the instrumental indications, it is a reasonable assurance that the final diagnosis, when all factors have been considered, is correct.

Specifically then, some of the diagnostic considerations confronted by the polygraph examiner which require his special attention and expertise are embodied in the following sample inquiries.

(1) Is the suspect's attitude and demeanor during the test acceptable, or is it necessary to better prepare the suspect before the test?

(2) Are the instrumental test recordings operating within the normal range, or is it possible that they are distorted by some physiological or mental defect in the suspect?

(3) Is the observed response caused by deception, or is it a result of some other type of emotional reaction not related to deception?

(4) Is evidence of non-cooperation indicated on the test charts?

(5) Are the test questions confusing? Will a lack of clarity cause a reaction even though the suspect agreed before the test that he understood the questions?

(6) Is it possible that the suspect has a deep seated anger which was not immediately apparent but which now requires further attention?

(7) Does the suspect require some type of stimulation to increase his test responsiveness?

(8) Is the suspect overly responsive on the test?

(9) Are the exaggerated charted test responses reliable, or is it necessary to further evaluate their reliability by using specialized tests - such as Guilt Complex Tests?

(10) Are the selected Control Questions applicable, or does a lack of responsiveness to the Control Questions necessitate changing the Control Questions or correcting the Control Question terminology?

(11) Have the test responses been repeated often enough to be assured of their reliability?

These and sundry other questions must be considered by the examiner before the final pronouncement of truth or deception can be made.

Finally, do the suspect's polygraph reactions conform to his behavior symptom responses as indicated in the pre-test interview? If not, is it necessary to require additional outside investigation and probably a polygraph re-examination? In addition, the diagnostic examiner's file must include the pre-test notations of the behavioral interview, the questions asked on the test, the charted polygraph reactions of the suspect's responses, and the correctional notations on the chart itself as permanent evidence to supplement possible court testimony. Such a polygraph policy provides ample cross-examination opportunities to the opposing counsel in every facet of the polygraph examination process. Furthermore, the pre-test notations as well as the permanent chart recordings are open to scrutiny by other diagnostic polygraph examiners for the purpose of either verifying the ultimate diagnosis or for objecting to the conclusions offered.

The unveiling of the examiner's true role should put to rest the insatiable search for an automatic machine that will detect lies. Refinements in the technology of the recording instrumentation have progressed as far as human physiology permits. Any further progress should now be directed toward new and refined techniques in procedure and application. No computer will ever replace the diagnostically well qualified polygraph examiner in his central role of determining truth or deception. The variables and combinations of variables involved are intrinsically human and mandate human diagnosis.

The qualified examiner is the life and breath of the polygraph and the development and progress in the field will depend upon innovations in techniques introduced by future examiner diagnosticians.

CONTROLLED BREATHING AS AN INDICATION OF DECEPTION

By

John E. Reid

All too often the respiration has been ignored as a helpful indication of deception. Some polygraph experts place little faith in its revelations because they say, "It is too easily distorted!" Other examiners, especially those who operate electrodermal instruments, are completely without this most helpful device.

During my 20 years as an examiner I have learned to respect the respiration recording as a true indicator of deception but since my studies on simulated blood pressure responses during lie-detection tests in 1944, I have found controlled breathing a valuable bi-product of the respiration recording. As a result of these studies and observations, instead of being exasperated with a subject who purposefully distorts his respiration, the examiner is given positive assistance in recognizing the guilt of the subject by these actions. In this paper I intend to consider only one form of controlled breathing and illustrate it with examples.

The vagus type of breathing is recognized by its deep rolling pattern that takes on a dragging effect and has a slow 6 to 8 cycles per minute rather than the normal respiratory rate of 14 to 20 cycles. (The right and left vagus nerves are located in that part of the brain known as the medulla oblongata and among other vital functions controls the rhythm of respiration. Physiologists have found that when the vagi are sectioned or paralyzed the normal cycle of respiration changes to a deep slow dragging type of respiration.) From these experimental studies, even though it is rare that a human being's vagi are sectioned, it is possible that a medical vagotomy may be induced by drugs and cause paralysis of the vagi. It is necessary, therefore, for the examiner to determine whether or not the subject is a vagus type breather due to section or paralysis or is controlling his breathing purposefully to avoid detection.

Recently in Texas a man was given a lie-detector examination regarding the murder of a young woman and the assault on another woman in the same locale. After the tests the subject was interrogated as guilty but when no confession was forthcoming and the subject persisted in his innocence, the examiner reversed his decision and apologized to the subject stating that a mistake had been made in the chart interpretation because the subject was a "vagus breather". Additional circumstances came to light later and finally this subject was flown to Chicago for additional lie-detector tests and the Texas polygraph charts were forwarded for background and study. The subject's respiratory rate was the same in his tests in Chicago as it had been in the Texas tests (6 to 8 cycles per minute). In order to verify whether or not the subject was a "vagus breather" a recording of the respiration was made from an adjoining observation room while the subject was left alone and unaware of the proceedings. During these periods the subject's respiratory rate was a normal

Paper presented at the Seventh Annual Meeting of the American Academy of Polygraph Examiners, September 1960.

18 to 20 cycles per minute. In addition to this the subject's respiration was recorded while he was being accused of committing the crime and this too was a normal 18 to 20 cycles per minute. If this subject was a true vagus breather, i.e., one whose vagi nerves had been sectioned or paralyzed, he would not be able to change his respiration rate from the vagus type of 6 to 8 cycles per minute to the normal rate of 18 to 20 cycles per minute unless he was purposefully controlling his breathing. Although a confession was not obtained from this subject a number of admissions were made that proved that he had actual guilty knowledge of the crimes in question. If additional evidence had not be obtained after this subject's first lie-detector examination, it is possible that he would have been dismissed and forgotten under the guise and label of a "vagus breather".

To further accentuate the possibility of error in this manner, some years ago a police lieutenant called me and said "I've just completed a lie-detector test on a young Amazon-type woman who is suspected of murdering her parents." He stated "her blood pressure responses were not significant because they contained only cyclical changes (typical of a nervous blood pressure pattern) and her respiration was smooth and even" and so he said "I reported her innocent and dismissed her." He said, "I can't understand it - the circumstances seem to indicate her guilt and frankly I'm worried." I quizzed the lieutenant about the "smooth, even respiration" and learned that the subject had a 7 cycles per minute rate and further discovered that between tests her rate was a normal 20 cycles per minute. It was observed that the subject was purposefully controlling her breathing and the lieutenant was about to instruct the investigators to re-arrest the subject and she finally confessed the murders.

Another case involved a Japanese vending machine serviceman who stated he was hit on the head and robbed of several thousand dollars of company money. His lie-detector records indicated a respiratory rate of 6-1/2 cycles per minute, but during a card test the subject's breathing was 14 cycles per minute, a typically normal rate. The subject was interrogated and confessed falsifying the report of the robbery and said he tried to purposely control his breathing to beat the machine.

There are more obvious types of controlled breathing such as hyperventilation and rapid low amplitude, as well as erratic and respiratory block types of controlled breathing and others of an indescribable nature. Considering all types of efforts on the part of the guilty subject to control his breathing, how many criminals in the past have been successful in avoiding detection by some form of controlled breathing because the examiner, due to ignorance, failed to recognize these evasive tactics and how many criminals, by controlled breathing, have lead the examiner to believe that the suspect had some physical or mental defect and therefore the lie-detector was called "ineffectual" because of this alleged disability?

I have had occasion to witness a great number of cases where the only indication of deception is the attempt by the subject to control his breathing and because of this indication and this indication alone a goodly percentage of these subjects confessed and others were proven guilty by other means. I have never had the experience, after being positive that a subject was trying to control his breathing, that that subject was proven innocent.

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THE "EMOTIONALLY WEIGHTED QUESTION" IN LIE-DETECTOR TESTING

By

John E. Reid

The "emotionally weighted question" theory is born of the doctrine that lie-detector responses are caused by the fear of detection and that this fear of detection is registered to a greater degree on some questions than to others. For example in using the control question technique[1] if the subject responds to a greater degree on the control question "Did you ever steal anything?" than he does to the question regarding the crime under investigation he is considered innocent of the crime; on the other hand, if he responds to a greater degree on the crime question than he does to the control question he is considered guilty.

The "emotionally weighted question" theory is an extension of the control question technique and is used effectively when the control question response is not significant enough to be used for comparison purposes and a decision as to guilt or innocence cannot be reached in this manner. In this event, relevant questions to the crime issue under investigation instead of the control question may be used for comparison purposes, but these relevant questions must be of less emotional weight than the most important question on the test, "Did you commit the crime?"

To illustrate: If the greatest reaction on the test appears at the question "Do you know who committed the crime?", that response ordinarily signifies that the subject is innocent of the actual commission of the offense. Another illustration of the usage of a relevant crime question as a control is a case in which the subject responds to a greater extent to the question "Did you receive any of the proceeds of the robbery?" than he did on the question "Did you commit the robbery?" In an actual case involving this issue, the subject admitted after the test that he received some of the proceeds but did not commit the offense itself, and subsequent developments verified his version and the interpretation of the polygraph examiner.

In case testing, any lesser question other than one based on the actual commission of the crime can be used in this manner even though it is related to the actual crime itself.

Ordinarily the heaviest emotionally weighted question on the test is "Did you commit the crime?" However, there is one exception to this rule and it can be explained in this manner. If another question on the test refers to some incriminating evidence such as "Did you leave some headlight glass at the scene of the accident?" there is a good possibility that this question (known as an evidence connecting question) may induce a greater response than at the main question on the test, i.e., "Did you strike the victim with your car?" To further illustrate the emotional weight of an evidence connecting question, let us consider the following actual case situation. A suspect was arrested regarding the burglary of a

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Paper presented at the American Academy of Polygraph Examiners Ninth Annual Meeting, Chicago, Illinois, August 1962.

manufacturing plant, the entrance to which had been effected by breaking a glass window. The suspect, whose hand was cut, alleged that a girl friend had scratched his hand during a lover's quarrel. On the test, in addition to being asked "Did you burglarize the plant?", the subject was asked "Did you cut your hand by breaking the window at the plant?" The subject showed a greater reaction to the question, "Did you cut your hand by breaking the window at the plant?" than he did on the question "Did you burglarize the plant?" Following the test the subject confessed the burglary and admitted he was far more concerned about the "cutting of his hand" question because he said "that question was the only one that really linked him to the burglary."

In each test the examiner should evaluate the emotional weight of a question especially if he is to use it for comparison purposes in eliminating the subject from the actual doing of the crime.

If the examiner recognizes the differences in the emotional weight to test questions he can avoid certain pitfalls in reporting his case results. For example, suppose the police submitted a subject for a lie-detector test and asked that he be questioned about four different robberies, 1) a robbery in which the victim was shot; 2) a robbery in which the subject's knife was found at the scene; 3) a robbery in which $5,000 was stolen; and 4) a robbery in which only 15 cents was stolen.

Assume that on a polygraph test the subject is questioned about all four robberies, and that he is also asked the question as to knowing who committed the robberies; and assume further that the examiner uses for control purposes the question "Did you ever steal anything?"

For purposes of this illustration, let us presume the subject is guilty of the four robberies which, of course, would mean that he also is guilty of the "knowledge question" and he would be lying also, of course when he answers "no" to the control question about stealing.

It is entirely possible that if the subject is asked about all four robberies on the same test, he would respond most significant to robbery No. 1 because of the heavy penalty involved for shooting the victim; he may show significant reaction on robbery No. 2 because of the "knife evidence" that closely connects him to the crime; but he may show only a slight reaction to robbery No. 3 where the $5,000 was stolen, and even fail to give any reaction at all as to robbery No. 4, where only 15 cents was stolen. He may also fail to react on the test to any "knowledge question".

In reporting the case, the examiner most certainly would say that the subject was guilty regarding robbery No. 1 and robbery No. 2, but could the examiner report the subject guilty on robbery No. 3 or robbery No. 4, or, can he say, based on the test responses, that the subject had any guilty knowledge regarding these crimes?

It is obvious from the illustration that if the examiner ignored the emotionally weighted question theory and incorporated more than one crime in each test, he is bound to err in his interpretation on at least one of these robberies and possibly two of them. More important than the use of the emotionally weighted question theory in this illustration, is the

necessity to confine the testing in a single examination to one crime and eliminate the chance of committing an error in this respect by overburdening the subject's emotional capacity.

There is one particular limitation to the "weighted question" theory but this limitation is true as regards to the lie-detector technique generally. If the subject has a mental or emotional defect his responses cannot be depended upon, and sometimes the examiner is unable to recognize the condition during the examination. An actual case of this type is the one in which a former employee of a trucking company was tested. Sometime after he had left the company, he thumbed a ride from a company driver who happened to recognize him. The subject forced the driver at gun point to drive to a secluded spot where he robbed the driver of $750, forced him to lie down in the rear of the truck, and fired two shots at him. Believing the driver to be dead the subject locked the truck and left. The driver was only wounded and when freed he accused the subject of the deed. The subject said "You're crazy" and denied the whole affair. The subject's lie-detector responses showed greater reaction on the control question "Did you ever steal anything?" than on the question regarding the robbery and shooting. Between tests, while alone in the room the subject broke two polygraph pens on the instrument, and because of this act alone the writer interrogated him and obtained a confession of the robbery, kidnapping and shooting of the driver. After the confession the subject was asked which question bothered him most on the test. Immediately he began to cry convulsively and finally answered, "the question about stealing anything." He explained about stealing nickels and dimes from his mother when he was a child and then continued to cry convulsively. The writer did not recognize any instability on the part of the subject until after he confessed and told of "stealing from his mother". Actually the subject responded to the control question about stealing to a greater extent, because he was mentally unstable and that fact was later proven by a psychiatric examination.

[1] "A Revised Questioning Technique in Lie Detection Tests." Journal of Criminal Law and Criminology 37 (6)(1947): 542-547.

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A REVISED QUESTIONING TECHNIQUE

IN LIE-DETECTION TESTS*

By

John E. Reid

The customary lie-detector questioning technique involves asking a number of pertinent questions along with several which are irrelevant to the matter under investigation but which are asked for the purpose of determining the nature of the subject's reactions to the test situation alone. A supplementary "card-control" test is often used in order to have available a known lie reaction (i.e., when the subject lies about his chosen card) for assistance in evaluating the subject's records when questioned about the matter under investigation. Except for the "card-control test" or an occasional "peak of tension" test which may be employed under certain exceptional conditions and circumstances, the conventional test questions are not shown to the subject in advance of the test, although he is told, of course, of the general nature of these questions.[1]

A revised questioning technique, which has been the subject of experimentation by the writer and his colleagues at the Chicago Police Scientific Crime Detection Laboratory contains, in addition to certain well selected irrelevant questions, two types of control questions inherently different from the aforementioned control questions employed in the usual lie-detector test. All the pertinent and control questions are read to and discussed with the subject in advance of the test itself.

(The author of this article, a member of the staff of the Chicago Police Science Crime Detection Laboratory, has had extensive experience in lie-detection examination of criminal suspects and witnesses. He has made two noteworthy contributions to the field of scientific lie detection, the first of which was described in a previous number of this Journal. See, "Simulated Blood Pressure Responses in Lie-Detection Tests and a Method for Their Detection," 36 (3): 201 (1945). The present paper describes Mr. Reid's second and equally important contribution. - Editor.)

* The writer gratefully acknowledges the assistance of Paul V. Trovillo, formerly of the Chicago Police Scientific Crime Detection Laboratory, who aided materially in establishing many of the principles upon which the revised questioning technique is based; to Fred E. Inbau, Professor of Law at Northwestern University, and author of "Lie Detection and Criminal Interrogation" for his advice and assistance in the organization and preparation of this paper; and to Richard E. Gorman, member of the staff at the Chicago Police Scientific Crime Detection Laboratory for his constructive criticisms and assistance in examining several thousand lie-detector subjects while employing this revised questioning technique.

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In the revised questioning technique, the examination is prefaced by a detailed explanation of the importance of the lie-detector test in the case, stressing the fact that if the subject is telling the truth he will willingly cooperate and the instrument will show that he is telling the truth. The subject is also advised that if he is lying the machine will disclose that fact, and then he will be so informed and asked for an explanation. At this point the examiner states, "That's fair enough, isn't it?" and then he continues as follows: "Now I'll ask you a set of questions which you are to answer truthfully by 'yes' or 'no.' Here is a list of the important questions which I'll read to you before I ask them on the test."

Each of the irrelevant questions in the revised technique deals with a known fact and not with a situation based upon a probability which the examiner assumes to be true. For instance, in dealing with an ex-convict murder suspect who is presented to the examiner as John "Red" Brown, the possibility must be borne in mind that Brown may have several aliases, for which reason it is better to use an irrelevant question, such as, "Have you ever been called 'Red'?" in place of the conventional test irrelevant question, "Is your first name John?" or "Is your last name Brown?" Likewise, instead of the usual third irrelevant question, "Did you have something to eat today?" it is advisable to use, "Did you ever smoke?" where the examiner has actually seen the subject smoking. These recommendations are based upon experiences which demonstrate that some subjects test the efficacy of the lie-detector by deliberately lying on irrelevant questions calling for answers not definitely known by the examiner. If they are not called to task about such a lie (which may well be so, since the irrelevant questions are used for the limited purpose of establishing a "norm"), the examiner will encounter much greater difficulties in obtaining an admission based upon the examiner's accusation of lying regarding the crime itself.

In contrast to the conventional type test, the third and pertinent question (e.g., "Do you know who shot John Jones?") is followed by another irrelevant question in the revised questioning technique. Since Question 3 is the first relevant crime question to be asked, the response, especially in blood pressure, occasionally carries over into what would normally be the Question 4 response when that question is pertinent to the crime in issue. By asking an irrelevant question at 4, a norm can be re-established so as to identify more clearly the responses to Questions 3 and 5.

The essential difference between the two types of tests is the use of the "comparative response" question and the "guilt complex" question, which are inserted in the revised test technique at Questions 6 and 8, respectively.

The "Comparative Response" Question

Special consideration must be given to the selection of Question 6, the "comparative response" question, because the magnitude of the response to that question is to be compared with responses to questions pertaining to the actual crime, and it may therefore serve to include or exclude definitely the subject as a suspect in the crime under investigation. If the examiner is fortunate enough to have in his possession certain information concerning a situation or offense involving the subject (but of

less importance than the actual crime being investigated) which the examiner knows or feels reasonably sure the subject will lie about, a question based upon such information and actually lied to will serve very well to indicate the subject's responsiveness when lying. Such a question thereby affords a basis for evaluating the nature of the response to the questions pertinent to the offense under investigation. For instance, when it is a known fact as indicated in the police records that the subject had been previously arrested but he denies ever having been arrested, a question should be framed about the prior arrest, such as, "Have you ever been arrested before?" When, however, a known lie control question is lacking, as is usually the case, a short preliminary interrogation of the subject regarding other crimes or happenings should precede the preparation of the "comparative response" question in order to ascertain the specific question to be used which may offer the best possibility of a deception response. For example, if John "Red" Brown in the foregoing case illustration is a known burglar and now suspected of the murder of John Jones, he may be asked, as a "comparative response" question, "Since you got out of the penitentiary have you committed any burglaries?" A response to that question which is greater than whatever response may be present at the point where the murder questions were asked, offers a reliable indication that the subject is innocent of the murder. As an alternative "comparative response" question for subjects such as John "Red" Brown, who have probably committed perjury in some of their previous trials, they may be asked, "Have you ever lied on the witness stand?" If the subject is a suspected first offender any one of several types of questions may be asked for comparative response purposes: for example, "Have you ever stolen anything?" "Have you ever cheated on your income tax returns?" "Have you ever committed adultery?" If the subject upon preliminary interrogation states that he once stole five dollars, the question must be rephrased and asked, "Besides that five dollars you told me about, have you stolen any other money?"

The examiner must feel reasonably sure, as the result of his preliminary interrogation, that the subject will answer "no" to any of the above suggested questions used for "comparative response" purposes. The examiner must also convey the impression in his pre-test interview with the subject that the "comparative response" questions are of real significance and importance.

The "Guilt Complex" Question

The "guilt complex" question is based upon an entirely fictitious crime of the same type as the actual crime under investigation, but one which is made to appear very realistic to the subject. For instance, if the subject is being examined regarding an actual murder at 222 Superior Street on December 1, 1945, he may also be asked, as a "guilt complex" question about an entirely fictitious killing on March 17, 1945, at 1121 State Street, an address familiar to the examiner and at which he definitely knows no murder was committed. The subject is questioned before the test and during the test about the fictitious "murder" on State Street in the same serious manner in which inquiry is made of the actual murder on Superior Street. The purpose of the "guilt complex" or fictitious crime question is to determine if the subject, although innocent, is unduly apprehensive because of the fact that he is suspected and interrogated about the crime under investigation. A reaction to the fictitious

crime question which is greater than or about the same as that to the actual crime question would be indicative of truthtelling and innocence respecting the real offense. On the other hand, however, a response to the actual crime questions, coupled with the absence of a response to the fictitious crime question, or by one considerably less than that to the actual crime questions, would be strongly indicative of lying regarding the offense under investigation. In other words, the reaction to the one question based upon the actual crime must be accounted for by guilty knowledge or responsibility rather than by nervousness or other factors, for otherwise the fictitious crime question should provoke a similar type of reaction.

In further explanation of the differences between the conventional questioning technique and the revised technique, let us compare side by side the respective test questions in a case involving John "Red" Brown, an ex-convict burglar, who is now suspected of murdering John Jones during the perpetration of a burglary:

(Note: Relevant questions in Capital type face; irrelevant questions in regular type face, and control questions underlined. All questions to be answered by "yes" or "no" without explanatory remarks. Time interval between questions approximately 15 seconds.)

Conventional Questioning Technique	Revised Questioning Technique
1. Is your first name John?	1. Have you ever been called "Red"?
2. Do you live in Chicago?	2. Did you stay in Chicago last night?
3. DO YOU KNOW WHO SHOT JOHN JONES?	3. DO YOU KNOW WHO SHOT JOHN JONES?
4. DID YOU KILL JOHN JONES LAST SATURDAY NIGHT?	4. Did you ever smoke?
5. Did you have something to eat today?	5. DID YOU KILL JOHN JONES LAST SATURDAY NIGHT?
6. DID YOU FIRE A .38 CAL. REVOLVER LAST SATURDAY NIGHT?	6. Since you got out of the penitentiary have you committed any burglaries?[2]
7. WERE YOU PRESENT WHEN JOHN JONES WAS SHOT?	7. Were you ever arrested before?
8. Did you go to school?	8. About two months ago did you kill a man during a burglary at 1121 State Street?
9. DID YOU TAKE A DIAMOND RING FROM JOHN JONES' ROOM SATURDAY NIGHT?	9. DID YOU STEAL A DIAMOND RING FROM JOHN JONES' ROOM LAST SATURDAY NIGHT?

10. DID YOU SHOOT JOHN JONES?	10. WERE YOU PRESENT WHEN JOHN JONES WAS SHOT SATURDAY NIGHT?
11. HAVE YOU LIED ON ANY OF THESE QUESTIONS?	11. HAVE YOU LIED ON ANY OF THESE QUESTIONS?

Conclusion

The experience of the writer and his colleagues at the Chicago Police Scientific Crime Detection Laboratory has pointed to several distinct advantages of the revised questioning technique over the technique generally employed. The "comparative response" question method affords a far better criterion on a subject's responsiveness than the usual experimental card control test. Furthermore, the "comparative response" question, which is used in place of the "card control test," is incorporated in the same test with the actual crime questions. This arrangement eliminates the conventional test possibility of a subject's reactions changing from one test to another, and it also offers a closer means of comparison.[3]

The "guilt complex" question determines the subject's apprehensive reactions to a crime situation generally, which is of considerable assistance in evaluating his reactions to questions regarding the case under investigation.

The procedure of reading and discussing the pertinent and control questions to the subject in advance of the test, with an explanation that the test will be confined only to the questions discussed, eliminates the element of surprise which sometimes is present when the subject hears the questions for the first time during the actual test. The preliminary comment regarding the effectiveness of the instrument in determining the truthfulness of the subject's replies and the use of carefully selected irrelevant questions to which the true answers are definitely known are additional advantages offered to the examiner in the revised questioning technique.

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[1] The conventional questioning technique referred to by the writer is actually the "Relevant-Irrelevant Question Test" introduced by Leonarde Keeler, who also devised the invaluable "Peak of Tension Test." Keeler is also noted for instituting the procedural technique commonly used in administering lie-detection tests. For a complete discussion regarding the "experimental card control" test procedure generally, see Inbau, F.E., Lie Detection and Criminal Interrogation (1942).

[2] Where a known lie question is available, it, of course, should be used in preference to the question here given as number 6.

[3] If a card control test is used at all, it should be administered as the first test given the subject, in order to impress upon the subject the efficacy of the instrument and technique in revealing lies. When using the revised questioning technique, if the "comparative response" question does not accomplish its desired purpose, the examiner as a last resort may refer to the "card control test" to determine the emotional reactivity of the subject.

SIMULATED BLOOD PRESSURE RESPONSES IN LIE-DETECTOR TESTS AND A METHOD FOR THEIR DETECTION*

By

John E. Reid

(This is an article of exceptional interest for it describes some very noteworthy original research in the field of lie detection which should contribute much to the increased accuracy of instruments used for purposes of detecting deception. In brief, the author describes how it is possible for a criminal suspect to control or obscure certain incriminating emotional responses in a covert effort to "beat the machine", and then goes on to describe a method and equipment which can be utilized to detect such attempts at stimulation. The instrument's recording also furnishes deception criteria heretofore unavailable to lie detection examiners. The author, a member of the Illinois Bar, is a staff member of the Chicago Police Scientific Crime Detection Laboratory and in this capacity has spent some six years in the field of lie detection. - Editor.)

Instruments for recording changes in blood presure, pulse and respiration have been used with considerable effectiveness in criminal and personnel investigations for the purpose of determining whether the person being tested is telling the truth regarding the matter under investigation. It is generally conceded, however, that the recordings of approximately twenty per cent (20%) of the subjects thus tested are too indefinite in their indications to permit the examiner to make a deception diagnosis.[1] In most instances, ambiguities in the blood pressure recordings have been attributed to an abnormal physical or mental condition of the subject under examination. However, recent experiments in lie detection, conducted by the writer, have revealed that not all inadequacies and ambiguities in the blood pressure tracings are the result of abnormalities in the subject but are frequently induced by some type of unobserved muscular movements. In an effort to clarify the nature of these muscular movements it was discovered (1) that all the typical blood pressure responses of deception can be produced artificially at will, (2) that such simulated responses can be differentiated from the true indicators of guilt complexes only through the use of new machinery for their detection,

* The writer is indebted to Professor Fred E. Inbau of Northwestern University, author of Lie Detection and Criminal Interrogation, to M. Edwin O'Neill and Richard E. Gorman of the Chicago Police Scientific Crime Detection Laboratory, and to Paul V. Trovillo, formerly of that institution, for their help in the experiments described in this paper, and also for their suggestions in the preparation of the paper itself. The writer also gratefully acknowledges the assistance of Joseph S. Price of the Chicago Police Scientific Crime Detection Laboratory in the construction of the instrument herein described, and the assistance of Raymond W. Heimbuch, also of the Laboratory staff, in the preparation of the photographic illustrations.

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and (3) that recorded evidence of muscular movement is in itself a criterion of deception.

The medical profession has recognized that blood pressure changes can be artificially induced by muscular contraction and relaxation. Mulliner and McKinzie in their treatment of the subject state: "As the blood goes out into the 'arterial tree,' there is more resistance to its onward flow, due to the narrowing of the tube. This is peripheral resistance, which is increased or lessened by muscular contraction or relaxation. The greater the resistance, the harder the heart has to pump to send the blood to its destination, with consequent increases in arterial tension. Arterial tension or blood pressure represents the pressure against the sides of the blood vessels exerted by the moving blood."[2] The writer's experiments have demonstrated that artificial blood pressure changes can also be induced by exerting pressure on various relaxed skeletal muscles and in effect accomplish the same or similar changes in the blood pressure that can be accomplished by the practice of muscular contraction and relaxation.

The Experiments

Blood pressure recording experiments were conducted with the writer as the subject and an associate as the operator. It was learned that lie-detector blood pressure recordings can be falsified in such a manner as to prevent a deception diagnosis either by the use of muscular contraction or by muscular pressure. The manner in which these blood pressure changes were effected was imperceptible to the operator and not detectable (on the basis of previously established deception criteria)[3] by any distorted indications in either the blood pressure or respiratory tracings.

In the experiment during which the tracings illustrated in Figure 1 were obtained, blood pressure changes were artifically induced at will by muscular contraction and also by muscular pressure.

Muscular contraction or muscular pressure, when used to falsify blood pressure changes, must be confined to the arms, hands, thighs, legs or feet, because if the torso muscles are utilized for this purpose, distorted recordings in the respiration will appear, revealing such attempts at falsification.

In order to simulate a true blood pressure change by muscular contraction without distorting the blood pressure or respiratory tracings, the muscles in the extremities must be stiffened or tensed without moving or flexing the muscles of the upper arm to which the blood pressure cuff is attached. (See Figure 2A and B.) To induce a blood pressure change due to muscular pressure, the ventral or anterior side of the forearm, for example, is forced down against a hard surface until the blood vessels in the arm are compressed by pressure self-exerted, resulting in a restriction of the normal flow of blood and a consequent increase in blood pressure.[4] (See Figure 3A and B.)

Experiments were conducted to determine whether the simulated blood pressure responses, obtainable when pressure is applied on the forearm, are the result of compression of the muscles of the forearm itself or the result of the contraction of various other muscles used to produce the compression. The writer's forearm was placed in a relaxed position upon a

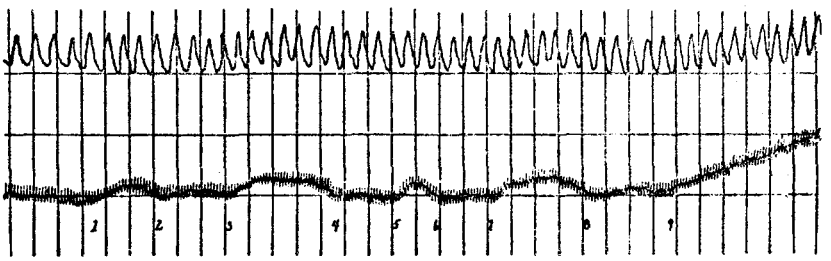

Fig. 1. Experimental Record Illustrating Various Simulated Blood Pressure Responses By Muscular Contraction and By Muscular Pressure

In the above illustration, and in all those which follow, the tracing on the upper portion of the graph is the respiratory recording; the lower tracing is the blood pressure-pulse recording; the chart on which the recordings were made is six inches wide, and each vertical line represents a five-second interval.

At 1, slight contraction of the thigh muscles; at 2, thigh muscles relaxed; at 3, sustained contraction of the thigh muscles; at 4, thigh muscles relaxed; at 5, slight pressure exerted on the right forearm; at 6, pressure released; at 7, gross pressure exerted on the right forearm; at 8, pressure released; at 9, gradual and sustained pressure exerted on the right forearm without relaxation. (In the above caption, and in the captions to Figures 2 and 3, the terms "muscles relaxed" and "pressure released" are used to mean that at the point indicated on the chart the muscles are completely relaxed or the pressure is complete released.)

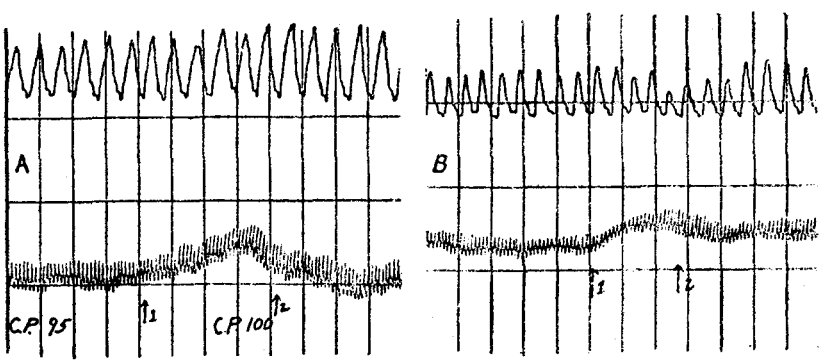

Fig. 2. Simulated Blood Pressure Changes Due to Muscular Contraction

(A) At 1, muscles in the right forearm are stiffened, or contracted; at 2, muscles relaxed.

(B) At 1, muscles in both thighs contracted simultaneously; at 2, muscles relaxed.

In all illustrations, where indicated, C.P. is cuff pressure.

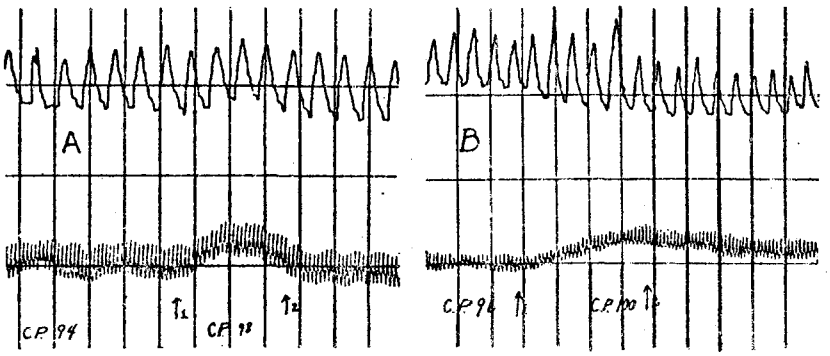

Fig. 3. Simulated Blood Pressure Changes Due to Muscular Pressure

(A) At 1, pressure exerted on the muscles of the right forearm; at 2, pressure released.

(B) At 1, pressure exerted on both feet by pushing down against the floor which in a sitting position; at 2, pressure released.

table and while a recording of the blood pressure was made an assistant forced a wooden compress against the dorsal or posterior surface of the forearm. This resulted in a blood pressure variation comparable to that obtained when the pressure is self-exerted, thereby establishing the fact that at least the major portion of such changes is due primarily to muscular pressure and not to muscular contraction.

That the foregoing methods for simulating blood pressure responses can be utilized to falsify a test record and thereby deceive the lie-detector examiner is illustrated in Figure 4. In the course of the test--an experimental card (control) test--the writer, as the subject, exerted pressure on the right (cuff bearing) forearm when questioned about a card other than one actually selected in advance of the test. A blood pressure response was produced at that point which simulates a true deception response and thereby serves to mislead the examiner.

The facility with which a simulation can be accomplished is further illustrated by Figure 5, showing an imitation of a blood pressure tracing obtained in an actual criminal case.

The criminal case records shown in Figures 6A and 7A are examples of incongruous blood pressure responses of the type which occasionally confront an examiner and which either prevent a deception diagnosis or render an interpretation very difficult. The explanation of these phenomena may be found in the method by which the writer actually simulated these two tracings. By gradually exerting pressure on the muscles of the right forearm the simulation 6B was made of 6A. By gradually releasing the pressure applied at the beginning of the record, simulation 7B was made of 7A.

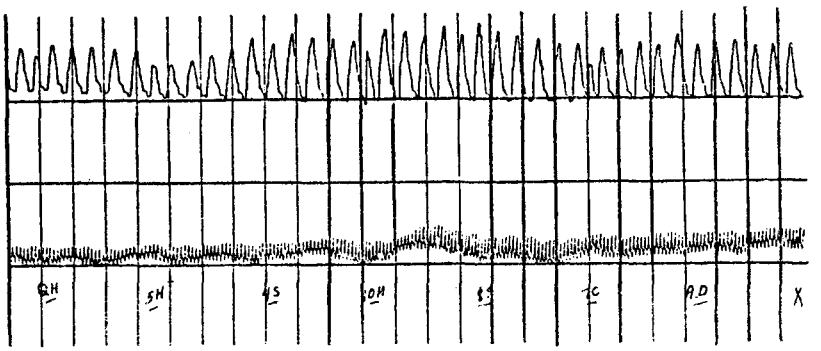

Fig. 4. Card (Control) Test Record Showing Falsified Blood Pressure Response

The card chosen before the test was the four of spades, but, by means of pressure on the muscles of the right forearm at the ten of hearts, the "deception response" appears at the ten of hearts.

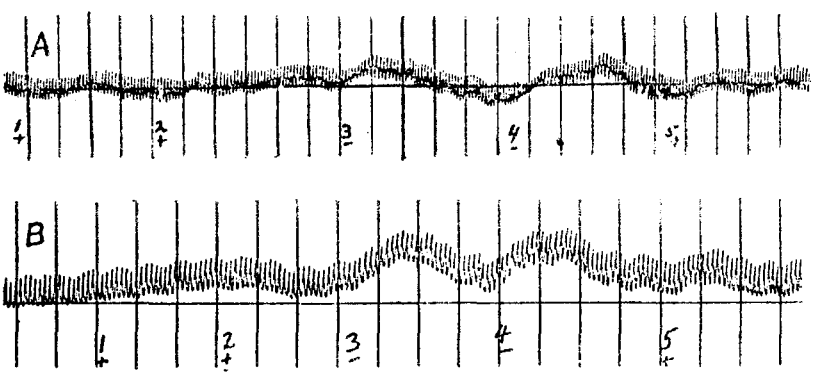

Fig. 5. Simulation of Actual Case Record

A is a blood pressure recording of a thief who later confessed stealing $900. Questions 1, 2 and 5 are irrelevant and questions 3 and 4 are pertinent to the crime about which the subject lied. Note blood pressure rises on questions 3 and 4. On B, the writer was asked the same questions and simulated the blood pressure responses at 3 and 4 as shown above.

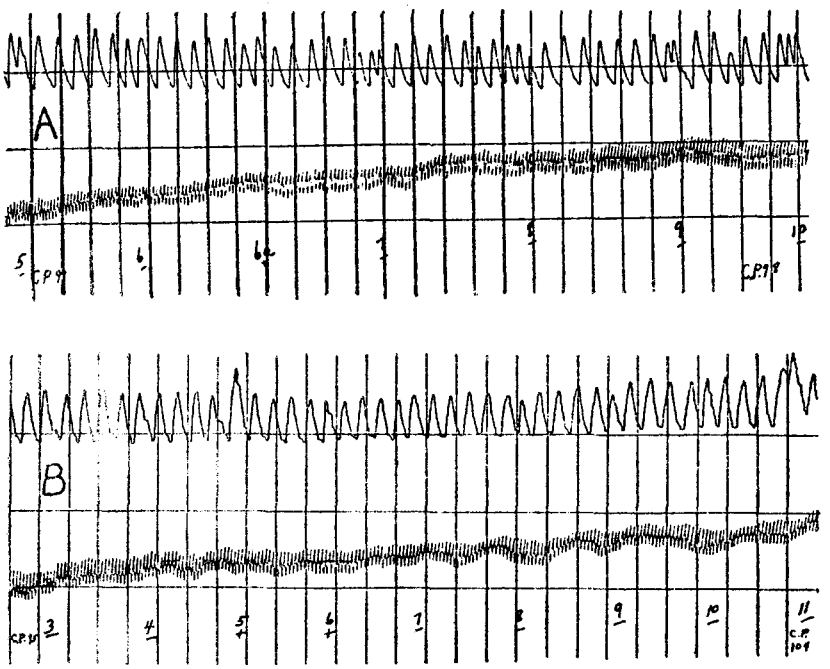

Fig. 6. Simulation of Actual Case Record

A is a record of an identified sex criminal. Note gradual blood pressure rise from question 5 to qeustion 10, an increase of 7 mm. of Hg. Compare A with B, wherein the writer simulated a gradual blood pressure rise by exerting pressure on the right forearm.

Criminal Case Studies

The reader must be mindful of the fact that in these various experiments the writer used his full power of concentration to simulate guilt reactions without being burdened with the guilt complexes of an actual criminal suspect. It is believed that the task of successfully simulating such blood pressure responses would be practically impossible for an untrained subject, but it is further believed that an untrained subject can influence his blood pressure reactions to such a degree as to introduce ambiguous responses which may confuse the interpreter.

In actual cases, ambiguous blood pressure responses which are misplaced in relation to deception indices, but which are somewhat similar in pattern to the simulated illustrations, may or may not be consciously accomplished. Heretofore the reasons for these unexplained blood pressure responses have usually been assessed to a faulty apparatus or an abnormal physical or mental condition in the subject. It is possible, however, that a percentage of these discrepancies in the blood pressure tracings may be the result of deliberate attempts by the subject "to beat the machine."[5]

Fig. 7. Simulation of Actual Case Record

A is a record of a confessed sex criminal. Note the downhill trend of the blood pressure as well as the gradual reduction in pulse amplitude. Compare A with B, wherein a similar change in amplitude and a downhill trend of the blood pressure were simulated by exerting pressure on the right forearm at the outset of the test and gradually releasing such pressure.

Where the deliberate attempt to distort the blood pressure tracing consists of a movement in the position of the cuff bearing arm, the resulting tracing is entirely different in nature from the result of a distortion induced by the sudden application or release of pressure. In the former instance a gross movement of the cuff bearing arm produces a sharp upward deflection of the tracing which immediately returns to the original baseline. (See Figure 8A.) However, when a deflection is produced by the prompt application of pressure, the tracing thus deflected will not return to the original baseline until the pressure is released (See Figure 8B), and if the deflection is produced by an immediate release of pressure maintained at the outset of the test, the tracing thus deflected will not return to its former baseline until the pressure is reapplied. (See Figure 8C.)

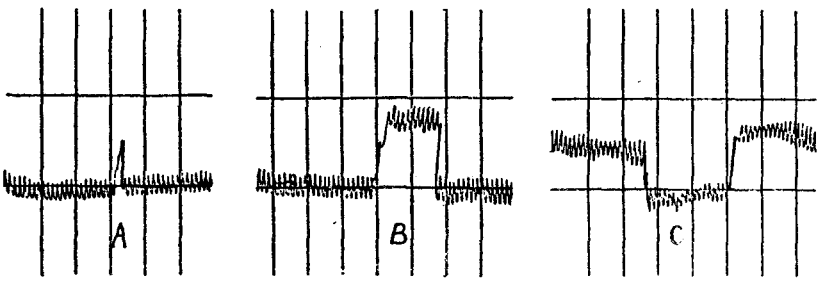

Fig. 8. Illustrations of Differences Between Ordinary Arm Movements and Movements Produced by Sudden Muscular Pressure

At A, right arm to which blood pressure cuff is attached is moved momentarily and then returned to its former position. Note deflection in the recording which returns to approximately the same baseline. At B, great and immediate pressure is exerted on the right forearm. Note the change in the blood pressure baseline which is maintained for several seconds until the pressure is released. At C, pressure is exerted on the right forearm at the outset of the recording and then released (indicated by downward deflection). A new baseline is established until the pressure is reapplied.

The blood pressure recordings of one hundred and forty-seven (147) verified guilty criminal subjects and eighty-three (83) verified innocent criminal subjects were examined for evidences of sharp upward or downward deflections in the blood pressure graphs as shown in Figure 8B, C, which are due to muscular pressure. In forty-six (46) known guilty records there were indications that muscular pressure was employed, while in only two verified innocent records similar indications were noted. The two innocent subjects, who gave such indications in their records, were later definitely proved to be psychopathic. Numerous other blood pressure records of criminal suspects also indicated the use of muscular pressure during the tests but since these records were not verified as to "guilt" or "innocence" they were excluded from the statistics.[6]

The more common indication that muscular pressure was used by criminal suspects during lie-detection tests is the sharp downward deflections in the blood pressure graph as shown in Figures 8C and 9. In a great many cases the only evidence of the subject's employment of muscular pressure during the test appeared in the form of a sharp downward deflection at the end of the recording when the subject was instructed that no more questions would be asked. In such instances there were no visible signs of any movements and undoubtedly the sharp downward deflections were indicative of a release of muscular tension. (See Figure 9A, B.)

Evidence of muscular contraction and relaxation as well as sustained muscular pressure are not always characterized by distorted blood pressure

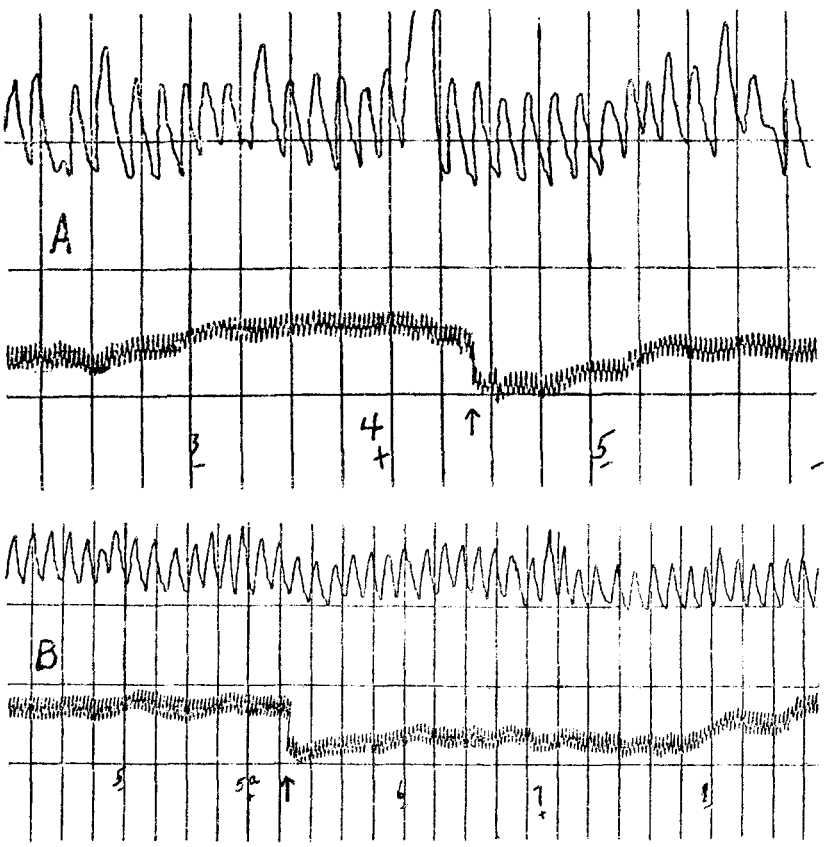

Fig. 9. Indications of Muscular Pressure in Actual Case Record

(A) Case record of a confessed sex criminal. 3 and 5 are pertinent questions regarding the crime about which the subject lied; 4 is irrelevant; at arrow, subject was told to relax. No visible movement was observed but sharp drop in blood pressure recording indicates that artificial pressure may have been exerted. Note that after arrow, blood pressure baseline is at a lower point than it was at the supposed normal before question 3, indicating that the subject may have been exerting some artificial pressure at the outset of the test.

(B) Case record of a sex criminal suspect. Note drop in blood pressure recording after irrelevant qeustion 5A to a baseline lower than on irrelevant question 4, indicating some artificial pressure may have been exerted at the outset of the test which possibly masked out a blood pressure response on question 5 relevant to the crime; 6 and 7 are irrelevant. A new baseline is established after 5A, whereupon an apparently genuine blood pressure response is exhibited on question 8 (pertinent to the crime).

patterns, such as in Figure 9A, B, at points indicated by arrows. That fact is amply illustrated by Figures 1, 2, 3 and 4, wherein the simulated blood pressure curves contain no obvious distortions. An examination of the tracings offers no satisfactory assurance (even to those looking for indications of such muscular activity) that the activity has not actually occurred. If a subject contracts or compresses any of the muscles of the extremities and maintains the same or an equal amount of pressure from the beginning to the end of the test there will be little if any visible distortion in the blood pressure tracing, but the recording will nevertheless be of an abnormal nature and not a reliable means in determining deception. Further, if the blood pressure baseline is at an upper range due to the prolonged application of muscular pressure the ordinary blood pressure deception responses may be masked out because the deception response range of the blood pressure is below that of the exerted pressure. (See Figure 9B.)

An Instrument for Detecting Efforts at Simulation of Blood Pressure Responses

Having observed and contrived means by which the lie-detector tests could be defeated, the writer set about to devise a method and equipment which would detect such attempts at simulation. It was resolved that if muscular movements[7] could be graphically recorded in conjunction with the blood pressure then each effort to simulate a blood pressure response would be detected and a new index as to the cooperation or non-cooperation of the subject would be established to aid in the interpretation of the lie-detector records.

The instrument designed for this purpose (as illustrated in Figure 10) consists essentially of a closed pneumatic system in which inflated rubber bladders (placed under the forearms and thighs) are connected to three separate tambour units, which permits the recording of any muscular exertion by the subject's feet, legs, arms and hands.

The subject's forearms rest on the inflated rubber bladders and a manometer reading of the normal initial pressure is obtained (approximately 20 mm. of Hg.). When artificial pressure is exerted on one or both arms the manometer registers between 20 and 30 mm. of Hg. pressure depending upon the intensity of the exertion. The rubber bladder placed horizontally across the front of the chair seat under the subject's thighs is inflated to approximately 30 mm. pressure and when the thigh muscles are contracted or compressed the manometer indicates 30 to 40 mm. pressure commensurate with the amount of the exertion.

The normal pattern for the muscular movement recordings is signified in most instances by a wavy line which is the result of body movement due to the respiratory action. Oftentimes body tremors are reflected and recorded in the normal body movement wave. Gradual muscular pressure (either by contraction or compression) applied to the forearm, hand, thigh, leg or foot muscles is indicated by a sagging downhill line which sometimes retains the wavy pattern. As the pressure increases a further decline is noted and when the pressure is released the recording returns to the original baseline. An immediate or prompt application of pressure is shown by a sharp downward deflection. Movements of the fingers, hands, knees, feet and toes are indicated and identified as distorted patterns in the

muscular movement tracings. (See Figure 11A, B, C and D.)

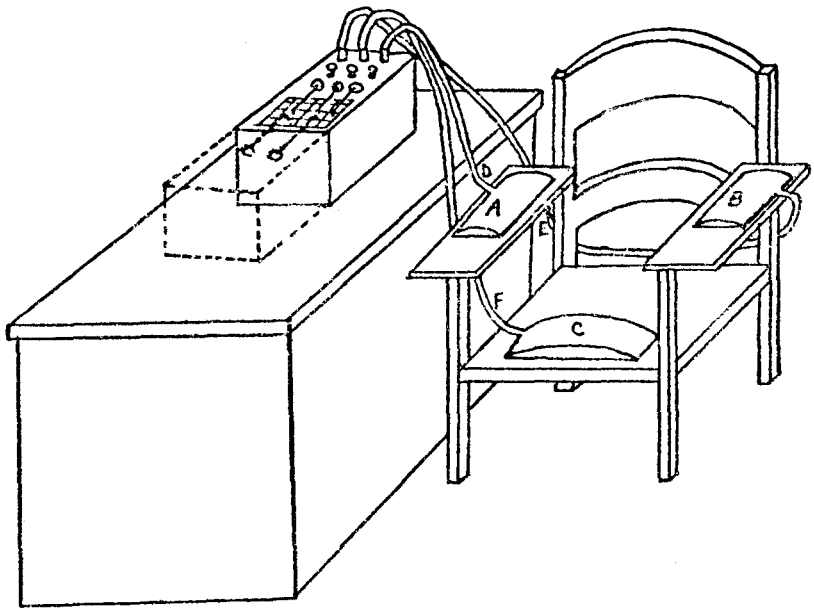

Fig. 10. Schematic Sketch of Instrument for Recording Muscular Movements

A, B, and C are air inflated rubber bladders. A and B are framed and stabilized to the chair arm rests, while bladder C is freely inserted in a specially prepared horizontal pocket in the front of the seat cover. Rubber tubes D, E, and F are fastened to a manifold (located within instrument box), which in turn is connected to three metal tambours that actuate individual pens on the recording styli. The broken lines illustrate the position of the blood pressure and respiration units which record simultaneously with the muscular movement tracings.

The manifold is a five-way metal tubular arrangement, the main pipe of which unites and interlinks the air passages to all five outlets. An air inflator bulb and a manometer are joined to two of the outlets while three tee fittings are attached to the remaining outlets of the manifold connection. The metal tambours and the rubber tubes D, E, and F are fastened to the remaining two openings of the tee fittings. To each of the outlets of the manifold that communicate with the bladders and the tambours, a stop-cock is inserted and placed between the main pipe of the manifold and the tee fittings.

The stop-cocks are used in this manner: two are turned to a closed position while the bladder attached to the third outlet of the manifold is inflated to the proper pressure using the inflator bulb and the manometer in combination. After the proper pressure is attained the stop-cock is closed and the next stop-cock is opened. The same procedure is repeated until all bladders have been independently inflated and closed off, confining the air to the bladders and the tambours.

An application for a patent has been made by the writer for the above described instrument.

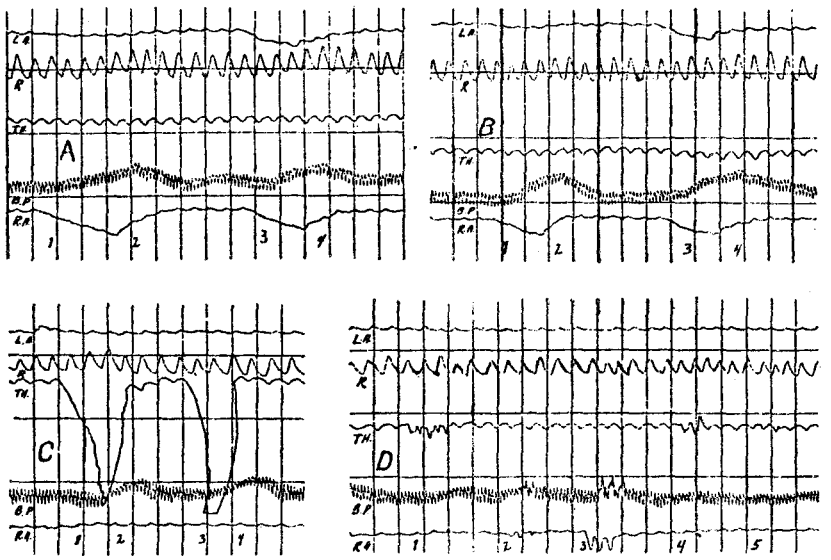

Fig. 11. Patterns of Muscular Movements in Experimental Records

The letter symbols, L.A., R.A., TH., R. and B.P., below each tracing signifies the recordings of the left forearm muscles; the right forearm muscles; the thigh muscles; the respiration and the blood pressure.

Although the recordings of movements and of blood pressure-respiration responses actually occur simultaneously, the recording pens are not in the same vertical alignment. In order to prevent the opposing pens from colliding, the movement recordings are displaced laterally, preceding the other tracings on the chart a distance corresponding to a three-second interval.

(A) At 1, gradual pressure exerted on the right forearm; at 2, pressure released; at 3, gradual pressure exerted simultaneously on both forearms; at 4, pressure released. Note deflection of the R.A. recording at 1; and at 3, both L.A. and R.A. recordings deflected. Each exertion is accompanied by a blood pressure increase.

(B) At 1, contraction or tension of the muscles of the right forearm and hand; at 2, muscles relaxed; at 3, muscles of both forearms and hands contracted simultaneously; at 4, muscles relaxed. Blood pressure increase at 1 and 3; also at 1 a downward deflection of R.A. recording; at 3, both L.A. and R.A. tracings are deflected.

(C) At 1, pressure exerted on both feet by pushing down against the floor; at 2, release of pressure; at 3, muscles in both thighs contracted; at 4, thigh muscles relaxed. Blood pressure increases indicated at 1 and 3, as well as downward deflecting of thigh recording.

(D) At 1, knees moved together slightly (in and out); at 2, fingers of right hand moved; at 3, right hand moved; at 4, right foot moved by pivoting on the heel; at 5, toes moved. Note distortion in thigh tracing at 1, 4 and 5, as well as distortion of the R.A. recording at 2 and 3.

Lie-detector tests have been compared to clinical examinations wherein similar physiological phenomena are recorded. Unlike the clinical patient, however, the guilt or lying criminal suspect does not willingly cooperate during a lie-detector test, but on the contrary usually attempts to control or obscure his incriminating emotional responses in a cover effort to "beat the machine." Therefore, it is imperative in the examination of criminal suspects to record not only involuntary bodily reactions but also those which can be purposefully altered at the will of the suspect. The preliminary experiments herein reported indicate that both muscular contractions and the application of pressure to skeletal muscles which can influence the blood pressure tracing may now be detected by new devices which even serve to locate the regions from which the muscular movements emanate.

Muscular Movements as Deception Criteria

Experiments beyond the scope of this paper, employing actual criminal suspects, are being carried on as a means of determining the extent to which movement recordings may be classified as patterns of deception. It was learned that not all subjects can influence their blood pressure curve by muscular action and therefore it is doubly important to record these movements as additional criteria to be studied in relation to deception. Examiners using the present technique will have a means, heretofore unavailable, of separating the true patterns of deception from the fraudulent ones and of isolating the patterns of bodily movement for new studies of their significance.

Footnotes

[1] See Inbau, F.E., Lie Detection and Criminal Interrogation (1942), 55.

The use of the term "lie-detector" in this paper is not intended to convey the idea that the instrument is an automatic machine which infallibly determines falsehoods, but is considered by the writer as an instrument for recording physiological changes that occur as the result of question stimuli, the interpretation of which may be studied for indices of deception.

[2] Mulliner, M.R., and McKinzie, R.T., Elementary Anatomy and Physiology (3rd Ed., 1931), p. 328. Also see, Howell, W.H., Textbook of Physiology (10th Ed., 1928), p. 494, Crandall, L.A., An Introduction to Human Physiology (3rd Ed., 1943), p. 134, and Abramson, D.I., Vascular Responses in the Extremities of Man in Health and Disease (1944), p. 142.

For a further study of muscular tension in relation to blood pressure changes, see Jacobson, E., Progressive Relaxation (1938).

A reasonable search of the medical literature revealed no direct comment regarding blood pressure changes due to muscular pressure in the manner reported by the writer. Indirectly it was reported in Blood Pressure, Cause, Effect and Remedy, by Barker, L.F., and Cole, N.B., at page 37, that veins near the surface of the body are subject to muscular pressure during bodily movements and that "such pressure from without is easily exerted, since the veins have thin muscular and elastic coats and are

easily collapsible in contradistinction to the arteries which always maintain their tubular shape."

Also see Blood Pressure Simplified, a manual published by the Taylor Instrument Company, at page 62, in which the Katzenstein method of testing the function of the heart is reported, and is based on the observation that when both femoral arteries are digitally compressed, the blood pressure will rise from 10 to 20 mm. of Hg.

Likewise see Jansen, W.H., Tams, W., and Achelis, H., "Blutdruckstudien. I. Zur Dynamick des Blutdrucks," Deutches Arch. f. Klin. Med. 144(1), 1924 (cited by Abramson, D.E., op. cit. supra note 2, p. 235), which states "that binding the extremities of normal persons with elastic bandages caused only an insignificant increase in blood pressure."

[3] Trovillo, P.V., "Deception Test Criteria. How One Can Determine Truth and Falsehood from Polygraph Records," Jour. Crim. Law and Crim., 33(4): 338-358 (1942).

[4] References to increases in blood pressure are not increases in absolute blood pressure but rather the relative increases appearing in the recorded pressure curves during lie-detection tests and often alluded to as the "mean" blood pressure. The pressure changes so recorded are proportional to the blood pressure changes of the body.

[5] On one occasion a young man who later confessed an automobile larceny was overheard to say that he "held one arm rather stiff during the tests." The blood pressure recordings of this subject were so irregular that a definite blood pressure interpretation was precluded, although the respiratory responses were sufficiently indicative of deception to report him guilty of the theft. In another case, a confessed rapist informed the examiners that he had read a publication on lie detection and learned that lying "slacks up your breathing," and therefore he decided that during the test he would breathe "fast." He also learned that blood pressure "slows up and goes fast" during the telling of a lie, so he "pressed his hand down hard to beat it." In still another case a guilty subject admitted that during the test he clamped his fingers around the end of the chair upon which his hand rested. (These case experiences were encountered before the subsequently described instrument was available for use during the tests.)

[6] The statistics seem to indicate that the application or release of muscular tension is common only to guilty subjects. However, the number of verified records observed is relatively small and therefore a definite conclusion cannot be obtained regarding deception when muscular tension is noted until a more representative number of records are studied for such indications.

[7] Various types of body movements have been recorded by both physiologists and psychologists although neither the mechanism nor the method used by the writer has been previously employed. See Jacobson, E., op. cit. supra note 2, and Gaskill, H.V., "The Objective Measurement of Emotional Reactions," Gen. Psych. Monog., 14: 177-280 (1933), Cason, H., and Cason, E.B., "Affectivity in Relation to Breathing and Gross Bodily Movements," J. Gen. Psychol., 9: 130-156 (1933) and Burtt, A., "Motor

Concomitants in Word Association," J. of Exp. Psych., 19: 51-64 (1936). A few psychologists have recorded motor reactions, especially tremor as related to deception. See Luria, A.V., The Nature of Human Conflicts (translated from the Russian and edited by Horsley Gantt, 1932), and Runkel, J.E., "Luria's Motor Method and Word Association in the Study of Deception," J. Gen. Psych., 15: 23-27 (1936).

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BEHAVIOR SYMPTOMS OF POLYGRAPH SUBJECTS

By

John E. Reid

Is is ethically acceptable for a Polygraph examiner to take into consideration, before making his report, the behavior symptoms of the subject during the course of an examination? It seems strange to ask such a question and probably stranger still if an examiner denies that he follows this procedure; i.e., reading the behavior symptoms of the subject during a Polygraph examination.

Are we less professional if we do take them into account before submitting our final report? My answer is that we are less professional if we do not take behavior symptoms into account. Anyone who is in the business of examining another human being and knowing the fallacies of human nature, in order to be reasonably accurate must include all the information he is capable of collecting and that includes his observations of the subject's behavior.

For example, a patient complained to the doctor that he has violent headaches and that the condition has been present over a period of time. The doctor observes that he is overweight, that he has a flushed face and pop eyes. The doctor concludes from the observations that the patient has high blood pressure. He then takes the patient's blood pressure, feeling quite certain that his observational diagnosis is correct. If the syphgmomanometer indicates a high reading his observations are confirmed that the patient is suffering from hypertension. If the blood pressure reading is normal, the headaches are then considered as emanating from another source.

Despite the hundreds of laboratory and x-ray methods of diagnoses available to medical science, many diseases can be recognized only by a doctor who uses his eyes and ears. Recently a noted diagnostician, Dr. Walter Alvarez, speaking before the American Medical Association convention, said; "Today I am distressed when I see that when a physician feels he must get a diagnosis, he is likely to send the patient to the hospital where he trusts the laboratory girls or the x-ray men will give him a diagnosis. Worse yet, when they do give him a diagnosis he is likely to accept it without question, as the cause for all the symptoms, even when a little thinking or questioning would show him that what was found could not possibly explain the patient's syndrome (group of symptoms).

The psychiatrist makes his initial diagnosis from the statements and actions of the patient. He may follow the diagnosis with some instrumental examination, such as an electroencephlogram.

A Polygraph examiner was berated during the Moss Congressional Hearing in Washington, D.C. in 1964 about the effectiveness of lie detection. He alleged that he Polygraphs subjects and makes his conclusions strictly from the tests alone without regard to the subject's behavior symptoms.

This paper has not been previously published.

This was a terrible mistake and it actually degraded our standing in the eyes of the professional fraternity. As I stated previously, every diagnostician without exception uses behavior symptoms to assist him in his diagnoses, so why shouldn't we.

Let us consider the history of behavior symptoms in relation to Polygraph testing. In 1940 when I joined the staff at the Chicago Police Scientific Crime Detection Laboratory, the only indications of behavior symptoms during a Polygraph examination was the word "Observations" printed on the top of the question sheet and sufficient space for notes. However, nothing was ever written in this space.

For one year I concentrated on the study of behavior symptoms. My secretary recorded all observations of subjects that were outside my presence and I recorded all behavior symptoms I observed. We found that most of the verified innocent subjects made similar comments and acted very much alike, and we found that most of the verified guilty subjects made certain comments and their actions were peculiar only to them. The recorded behavior symptoms of each group of the guilty and each group of the innocent were so significantly alike that it prompted my secretary to comment, "It is amazing that all the innocent subjects talk and act alike (i.e., innocent) and all the guilty subjects talk and act alike (i.e., guilty) regardless of their status - rich or poor, educated or uneducated. The educated say the same things as the uneducated. The only difference being the educated use better terminology.

In 1953 Dick Arther and myself wrote a paper on the behavior symptoms of lie-detector subjects and published it in the Journal of Criminal Law and Criminology. For those who are interested in the citation - Journal of Criminal Law and Criminology and Police Science, Vol. 44, No. 1 (May-June 1953). We evaluated the behavior symptoms of 486 verified guilty subjects and 323 verified innocent subjects. The findings in that article are still valid, but we have added considerably more behavior symptoms information since that time.

The study of behavior symptoms begins when the subject arrives at the laboratory and ends when the subject leaves the laboratory at the conclusion of his full examination. The most significant behavior symptom that is indicative of guilt is after a subject has been accused as guilty during an interrogation and denies his implication, but while being dismissed turns to the examiner, shakes his hand and says, "sorry to have caused you so much trouble?"

It is a tedious job to handwrite and record the subject's behavior symptoms, but it pays off a hundredfold in the valuable assistance it gives the conscientious examiner in finally making an accurate report on the case.

It is important to take the facts in the case from an informed investigator who has had some personal contact with the suspect. To illustrate this point, but using a very extreme case, I recall a case for the Attorney General of a Western State. A state representative accused a contractor for an architectural firm of offering a $50,000 bribe in the construction of a state office building. The state representative took his test first. Behavior symptoms: Petty quips in his comments. He certainly did

not rub the examiner down, and he seemed to almost indicate somewhat of a degrading attitude toward the examiner. These comments were not complimentary but he passed his test.

The accused contractor's behavior symptoms were quite different, somewhat peculiar. When he entered the Polygraph room his face had a gray pallor. He appeared to be almost in a trance. He could not speak at all, not even to mention his name. In taking the history of the case I learned from the Attorney General that the contractor was a prominent man who was often called upon to be the toastmaster at many dinners; that he was very witty and had a "gift of gab." His Polygraph records were dramatically guilty.

This same tongue-tied condition was common in several other cases of subjects who were later proven guilty after the tests were completed.

SIXTH SENSE

We all know we are endowed with five senses: 1) seeing, 2) hearing, 3) tasting, 4) smelling and 5) feeling. Oftentimes certain people are credited with a sixth sense; such as an investigator who believes and leads others to believe he has a sixth sense in knowing a person is lying even though he does not have a Polygraph. It is considered some undefinable divine attribute - a sixth sense.

In 1945 a prominent woman was murdered in the Drake Hotel in Chicago, and after testing a number of suspects, I finally examined the key clerk. She was a woman who was very crisp in her answers, very staunch in her denials, and not very cooperative during the test. I arranged for a reexamination the next day.

That night I was driven home by a "Bull Dick" who had a great reputation for solving cases. Everyone was impressed with him. If he said a suspect was guilty he turned out to be guilty. Every policeman who came in contact with him was convinced he was endowed with a sixth sense. Going home he said, "Reid that broad is guilty. I don't give a damn whether your machine shows it or not!" Actually I felt the same as the "Bull Dick" about this woman, but I was anxious to get better charts before saying so. Since I have made an extensive study on behavior symptoms at the time, I asked the "Bull Dick," "Why do you think she is guilty?" He said, "take my word Reid, she's guilty and that's that." No matter how often I attempted to find out why he believed she was guilty, I could not get a specific detail as to why he believed she was guilty except his most revealing statement; "I have been around a long time, and I've seen a lot of them, and you can be sure if I say she's guilty, she's guilty."

Before the reexamination the next day, I inquired from other policemen about the observations of the "Bull Dick," and they all assured me that if he said that, she must be guilty, because over the years no one found him to be wrong in cases like this.

The reexamination indicated clearly the woman was in fact guilty of the murder and, subsequently, it was proven beyond doubt that she was really guilty. The "Bull Dick" was right again, but actually he did not know how or why he was right and why he could so unequivocally declare the

woman to be guilty. I am sure he believed the Lord Almighty favored him above all others and gave him a sixth sense. Actually over the years this "Bull Dick" was using his ordinary senses to see, to hear, to feel, yes -- and even to smell, and maybe taste the guilt and in doing so he recorded it in files of his memory. In other words he observed her actions when she was questioned and they appeared guilty similar to thousands he had seen before. He listened to her answers and inflections while talking and this also indicated guilty similar to the thousands he had heard before. He had a feeling she was guilty because all things put together added up to guilt in that his feelings had been directed to these areas before. Actually it was not a sixth sense, but a good use of the "Bull Dick's" five senses.

What a person does or says should give certain indications as to whether he is lying or telling the truth. For example, a book was published recently by Julius Fast called Body Language which states certain body movements indicate certain things, and the book extensively identifies these items and their meanings. These body movements are behavior symptoms and make interesting reading for a Polygraph examiner.

It would be impossible in the time allotted to quote each statement that is common to the guilty, and each statement that is common to the innocent. However, as a special illustration, I would like to give as an example the real meaning of the spoken word "NO." The Polygraph examiners hears the NO more often than anyone else. What does the word NO mean from a deception standpoint? When a suspect says "NO," is he lying or telling the truth? I am going to give you some examples acappella; i.e., the spoken word NO without the Polygraph accompaniment, i.e., not considering the Polygraph responses but the behavior symptoms of the subject when he says the one word NO.

The first group of NO answers are spoken by the truthful person. The hypothetical question asked to illustrate the point is, "Did you steal the $500?"

The subject who answers "NO" and is direct and unequivocal - almost angry and very crisp is telling the truth.

The subject who says "NO" in a very final way is telling the truth.

The subject who says "NO" indicating disbelief is telling the truth.

The subject who says "NO" indicating you must be kidding is telling the truth and,

The subject who says "NO" in a challenging way, like "I should say not" is telling the truth.

The following NO answers are made by lying subjects. The same hypothetical question is used as our example, "Did you steal the $500?"

(When a subject is sitting next to a Polygraph his behavior symptoms are much more revealing than if he is sitting at a desk in an office elsewhere.)

The subject says:

"NO" - crosses his legs and shifts in the chair is lying.

"NO" - looks in a different direction, down and up, or sideways is lying.

"NO" - closes his eyes is actually seeking to escape and is lying to hide.

"NO" - shakes his head NO and tried to place more emphasis on NO to be more convincing.

"NO" - answers late is lying. Actually the delay is caused by the debate in his mind, "Shall I say YES, I better say NO."

"NO" - questions. A breathless sort of way is lying but is offering a "NO" as "try that on for size" is lying.

"NO" - hesitates and appears to be thinking is actually hiding behind an alleged seriousness is lying.

"NO" - studies, sort of false deliberation is lying.

"NO" - apologies in saying "NO" is lying.

"NO" - plead is lying.

"NO" - qualifies the NO by the inflection of the voice is lying.

"NO" - has an empty or washed-out look, but this is a last ditch effort to "get out from under" actually is lying.

"NO" - pauses and looks like the question was not directed to him even though he and the questioner are the only ones in the room and the question is directed to him. He almost appears to be in an hypnotic state. He is lying.

"NO" - studied eyes is lying.

It must be absolutely clear to the Polygraph examiner that it is not only what the suspect says but more importantly as to how he looks and acts when he says it. The subject actually transmits his true status by his looks and his actions.

The problem now presents itself to the Polygraph examiner - what takes precedent, the behavior symptoms or the Polygraph charts? In other words if the behavior symptoms indicate one thing; for example, "guilt," and the Polygraph charts indicate "innocence," which do you follow in making your report? As a general rule in this situation, as specifically stated, if all things are equal; i.e., the test has been properly conducted and the subject is reliable physically, mentally and emotionally, the Polygraph charts would take precedence and the subject should be reported innocent. (To repeat: If the behavior symptoms are guilty and the Polygraph charts show innocent, report the subject innocent.)

It is an easy task for the Polygraph examiner, if the behavior symptoms and the Polygraph charts are in accord with one another. The examiner can report it as such and have no further worry about the results. If the behavior symptoms are contrary to the Polygraph records, it is incumbent upon the examiner to resolve this discrepancy before making a report by:

1) administering additional tests; such as, guilt complex test for the overly responsive subjects, and the use of stimulation technique for the under-responsive subjects.

2) arranging for a reexamination.

3) reevaluating the subject's behavior symptoms.

4) reevaluating the control questions to determine if they are effective.

5) before additional tests, seeking an explanation for the Polygraph record responses by assurances that if an admission is made and if it does not relate directly with the issue under investigation, it will be withheld from the report.

6) stepping-up interrogation to feel him out as to his true status.

After you have completed these steps and if the behavior symptoms are still contrary to the Polygraph charts, by all means report the findings as indicated on the Polygraph charts.

I recall the time one of our young examiners showed me a Polygraph chart that was clearly guilty. I told him to confront the subject and he did. He related to me that the subject practically threw him out of the examining room, and because of the outburst, the examiner thought he should reverse himself and report the subject innocent. I suggested a reexamination and suggested that he tell the subject that if he had anything on his mind to tell about it before the reexamination The next day the subject returned. The young examiner was reluctant to do the reexamination, saying, "I can't face that guy, will you do the reexamination?" I agreed, and the young examiner positioned himself behind the mirror to observe. As soon as I walked into the examining room the subject stood up and said, "You don't have to run this test again. I wrote out this confession last night at home." I heard a dull thud in the observation room. The young examiner was so shocked at the change of behavior he couldn't believe it.

I will now address myself to some outstanding behavior symptoms that are usually common to the guilty.

1. A subject who says before the test that he does not believe in the lie-detector, or has no faith in it because he heard it made a mistake once, is usually guilty. In this same regard, but quite a different observation, if a subject is confronted in an interrogation after the test as not telling the truth and he denies it, I have often said "if the machine is wrong I'll throw it in the lake." Usually the guilty subject will not berate the Polygraph at this time and usually will say, "Well I

can't say your machine is wrong, I don't know anything about them." Strangely enough he is afraid to offend the examiner by offending the Polygraph because he is guilty.

I recall tsting an old fellow one time, whose Polygraph charts were inconclusive so I thought I would draw him out. I said, "If the lie-detector is mistaken I will throw it in the lake." He said, "I wouldn't do that, that's an awful nice looking machine and it probably cost a whole lot of money. Maybe you can take it back where you bought it and get your money back." He was innocent.

2. Restitution: A subject who agrees to pay money back even though he says he didn't steal it is guilty.

3. Females: Fast walking, fast talking, fast acting, looks resentful. Fast answers, very crisp and very abrupt; usually will not admit anything, are guilty.

4. Females: Accused of petty theft will not admit it regardless, but will make much greater admission even from the same place. Example: A woman clerk accused of pocketing $2.09 from a sale, denied and denied the $2.09 but admitted stealing $390 in the same manner at other times. It seemed almost to be a religious stubbornness that because she originally denied it and was strongly confronted by the accuser, she would not accommodate the accuser with an admission.

A stewardess trainee accused of stealing small articles of clothing from her roommate vehemently denied it, but admitted stealing the roommate's paycheck which was not considered stolen but believed to be lost. It was not even mentioned, but the stewardess confessed it anyway. She never did confess the theft of the clothing.

5. Guilty: A subject who stands up when the examiner enters the room, shakes hands and says, "Are you Mr. Reid? Do you know Joe Zilch, well Joe said to say 'hello.'"

6. Dry Mouth: (Including a clicking sound.) The subject usually is guilty but there are some exceptions; such as, a dry mouth before giving a speech caused by fear and apprehension, or the subject may suffer from a malady like hypoglycemia (low in blood sugar) and as a result the mouth is clicking dry. Also, some drugs taken for medical reasons cause a dry mouth; such as the drug Ornade.

In this same category the bobbing up and down of Adam's apple is considered by some as a sure sign of lying. I recall, almost twenty years ago, a retired police captain got a security job in one of Chicago's big hotels. Some money was stolen from one of the rooms. The captain brought a bellhop in for a test and said, "This guy is guilty as hell. Anytime that old Adam's apple bobs up and down he's guilty and this guy's Adam's apple is bobbing up and down." I tested the bellhop and told the old captain he was telling the truth. He thanked me and walked out. The next day he brought another employee in for a test regarding the same theft who was completely removed from the bellhop who was tested the day before. The captain said, "Reid, this guy's Adam's apple is bouncing up and down. He's as guilty as the guy you tested here yesterday." It turned out the

second guy was guilty and confessed. The bellhop was verified innocent. So in this case the bobbing of the Adam's apple was fifty per cent right and fifty per cent wrong. This percentage pretty well follows my observations of the bobbing Adam's apple as an indication of deception.

The subject who makes excuses as to why the Polygraph will show him guilty; such as, the complaint of no sleep, high blood pressure, heart trouble, etc., is usually guilty. However, the subject is only guilty if he makes these excuses before the test begins and cannot submit the name of his doctor who has been treating him. If he gives the name of the doctor and invites you to call him, he may be innocent. He is definitely innocent if he tells the examiner later on in the examination; i.e., at least after the card test that he has a disability. This man is not using his disability as an excuse. Usually this subject actually has a disability and if necessary can document his ailment by referring the examiner to his physician.

7. Behavior Symptoms of Children: Be very careful in trying to evaluate the behavior symptoms of subjects between the ages of 9 to 14 (boys and girls). They can lie and make up stories and appear to be telling the truth when they actually are lying. Depending on their observations as truth or deception is very risky.

Example: A fourteen-year-old girl who was accused of breaking boarding school rules by writing a letter denied she wrote the letter and was expelled from the school. Her mother arranged for a Polygraph examination. She failed the test and when told by the examiner that this was going to be reported to her mother, she threw herself in front of the door and pleaded with the examiner not to do so. She said that if her father learned of it he would beat her to an inch of her life - very dramatic. It was necessary for the examiner to forceably push her aside in order to report to the mother. The examiner was convinced that the father was a difficult person and, therefore, pleaded with the mother to intercede with the father not to be too harsh. The mother asked, "What did she tell you?" The examiner related the story the girl told about her father beating her to death, and the mother said, "Why that little brat, she twists her father around her finger. Her father is the easiest going individual in the world and has never touched her (the girl) ever!!"

6. Innocent Observation: A subject who says they are trying to "frame" me is usually telling the truth, after the examiner proposes a guilt complex test and reads the fictitious crime to him - "Are they trying to pin that on me, too."

This is a good indication the subject is telling the truth about the actual matter under investigation.

A subject who says, "If there was a million dollars I might think of stealing it, but I wouldn't take some lousy amount like that (1,000)" is usually innocent of the theft of the $1,000. Actually if the subject had the opportunity to steal a million dollars he would not do it either because he would be too afraid of the consequences, so he would be innocent of that amount, too.

If a subject fully cooperates throughout the test, usually the

subject is innocent. If a subject purposely does not cooperate, he is usually guilty.

For this reason the innocent subjects are easier to recognize and their Polygraph tests much easier to interpret.

In conclusion it is absolutely imperative, in order to obtain a professional image, to use all the information we have at our command, and coupled with our special attributes as competent examiners, we can materially increase the reliability of the Polygraph technique.

The proper use of behavior symptoms is helpful as a precautionary measure to protect the innocent subjects from false positive reports and as an aid in preventing false negative reports of subjects who are actually guilty. In addition to properly using behavior symptoms we can be directed to be more cautious and to further test the subjects whose Polygraph records are inconclusive in their indications. Additional tests may help to reduce the number of indefinite reports.

Finally, by using behavior symptoms the Polygraph examiner will be much more content in his decision making and will be able to sleep better at night.

* * * * * *

INTERPRETATION OF TRUTH AND DECEPTION

IN POLYGRAPH TEST RECORDS

By

John E. Reid

The interpretation of polygraph records is a complex undertaking and requires the proper preparation and the processing of the S in order to accurately determine his status in terms of truth or deception.

In about 25% of the polygraph cases the responses are clearly indicative of truth or deception. These responses; such as, a rise in BP or a suppression in R, can easily be pointed out to an observer untrained in the polygraph technique.

Approximately 65% of the polygraph test responses are not clear and require specialized techniques in questioning, careful study, and expert interpretation in order to evaluate them in terms of truth or deception.

Up to 10% of the polygraph responses cannot be interpreted due to some mental, physical, or emotional imperfection on the part of the S. (This group may be reduced to 5% in the personnel testing field due to the better caliber of Ss, but 10% indefinite is most acceptable in the police field.)

All illustrations referred to in this manual are taken from the book, Truth and Deception (1977).

First respiratory deception responses. (Fig. 13 to 22). Although an ascending staircase suppression is a valid deception response, a descending or down staircase suppression is not a reliable deception response.

Fig. 15. A suppression in R that assumes the appearance of a staircase or upgrade set of steps, and which begins immediately after a test Q has been answered, is a very reliable criterion of deception. It may occur in several forms, as shown above and as indicated by arrows.

Fig. 16. A rise in the R baseline (as indicated by arrows) at the time a test Q is asked, is another very reliable symptom of deception. As shown in the illustrations, the rise usually lasts for 15 or 20 seconds, after which the baseline ordinarily returns to its normal level.

In addition to these types of R suppressions, R blocks are common deception indices. (Fig. 14) A R block occurs when the S completely holds his breath for several seconds after answering the test Q. (Also see other R Deception Patterns, Fig. 17 to 22).

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The BP deception responses are illustrated in Figs. 24 to 26.

Fig. 24. "A" A typical deception response is shown here by a rise in the base level of the tracing. It reflects an increase in BP as the crucial Q was answered at the beginning of the tracing shown here. Observe also, the accompanying reduction in pulse amplitude.

"B" is a BP rise that is not normally accompanied by a decrease in pulse amplitude, as in "A."

"C" Deception criteria may appear in less dramatic form than shown in "A" and "B." The tracing here is from an overly obese person. It is equally as significant as the responses in "A" and "B".

"D" Observe that in this deception response the BP level was higher prior to the relevant Q (dotted line and arrow) than after the relevant Q response interval. The BP dropped to the baseline 1/4 inch lower than the original one, as indicated by the second set of dotted lines. This is probably due to the S's anticipation of the Q and the relief from tension after his lie answer, and a relief thereafter.

"E" is an illustration of a rather rare occurrence of a deception response appearing in the BP-pulse tracing of a S with an exceedingly slow pulse (34 cycles a minute).

"F" is a BP-pulse response in the shape of a "roller coaster." (In addition to the above specific response indications of deception, an examiner will occasionally encounter a general indication in the form of a gradual increase in BP or a maintenance of tension which is reflected in a rise in the BP tracing up to the most important or significant relevant Q (e.g., Q-5), and a drop in BP, or a release of tension when the next Q (e.g., Q-6) is asked. Care must be exercised, however, to avoid an accidental rise in the tracing as a result of improper cuff pressure, as illustrated in Fig. 25B.)

Intelligent - One cardinal principle regarding the BP-pulse changes illustrated in Fig. 24, is that in cases involving intelligent, educated Ss such changes are not reliable as criteria of deception unless accompanied by some kind of R changes or irregularities, even though they may be slight in nature and lacking in themselves the quality of R criteria of deception.

Unintelligent - As regards unintelligent, uneducated Ss, however, their deception may be revealed in BP-pulse changes alone, without any accompanying changes or irregularities in R.

The CQ test consists of known truthful Qs which are the irrelevant Qs; such as, (a) "Do they call you John?" (b) "Are you over 21 years old?" (c) "Did you ever go to school?" The answers must be known beforehand to these Qs; therefore, they can be used as a truth norm. However, if we ask, "Did you have any coffee today?" without being assured the S did have coffee, the S may test the accuracy of the polygraph and answer "YES," when actually his answer should have been "NO." This erroneous answer "NO" would destroy the normal truthful pattern sought by the examiner. Therefore, do not ask an irrelevant Q in which the answer is in doubt as to its truthfulness.

The irrelevant Qs are placed at Qs 1, 2, 4 and 7; and the CQs are placed at Qs 6 and 10 or 11. The secret in the success of the CQ technique is the proper selection of the CQs.

The CQ is one which is unrelated to the matter under investigation but is of a similar, though less serious nature, and one to which the S will, in all probability lie; or at least his answer will cause him some concern with respect to either its truthfulness or accuracy. For instance, in a burglary case the CQ might be; "Have you ever stolen anything?" The Q must be answered "NO." If the answer is "YES," the S must explain the answer which is usually an admission. If the S makes an admission to the CQ the Q must be rephrased to include the admission; such as, "Besides what you told about did you ever, etc.?"

Test Qs 3, 5, 8 and 9 are the crucial Qs and relate to the matter under investigation.

Prior to each test, the S is told precisely what the Qs will be, and he is also assured that no Qs will be asked about any other offense or matter than that which has been discussed with him by the examiner. Surprise has no part in a properly conducted polygraph test.

Several CQ tests may be required before an examiner will attempt a deception diagnosis.

In these tests, if the S consistently responds more to the CQs than to the crucial Qs, he is reported innocent. On the other hand, a greater response to the crucial Qs in comparison to no response or only a slight response to the CQs, indicates the S is guilty regarding the crucial Qs. However, before a definite conclusion of guilt is permissible several other tests and procedures are required to be assured of the S's deception status. These test procedures include: (1) Stimulation Techniques for the unresponsive; (2) GC Testing for the overly responsive; (3) Mixed Order Question Test for the apprehensive and "spot" responders; (4) Stabilizing Test for the highly nervous Ss; (5) Reexaminations for the erratic and inconsistent responders; and (6) Affirmation Tests for Ss attempting to "beat the test."

To illustrate the indications of innocence and of guilt in the control questioning technique.

Fig. 29. Qs 3 and 5 pertained to the embezzlement of a large sum of money, (3) "Do you know who stole the missing money?" and (5) "Did you steal the missing money?" 4 and 7 are irrelevant Qs. Observe suppression in R and the BP rise at CQ-6 when the S was asked; "Did you ever steal anything?" The answer to which was a lie according to the S's later admission.

The S's card test record contained no response at his chosen card Q, and if reliance were place upon the card test for control purposes the S would have been classified as "unresponsive." But, upon the basis of the above CQ test record, the examiner was able to definitely report the S as telling the truth about the missing money.

Fig. 45. Qs 3 and 5 pertained to a burglary; 4 is irrelevant; 6 is

the CQ, "Did you ever steal anything?" The S's answer of "NO" was a known lie. The lying regarding the burglary was of paramount concern to this S, whereas his general stealing was of no consequence. This is the reverse of the situation with a person who is telling the truth regarding the main issue; his principal concern on the test is the CQ lie.

Tests 1 and 3 are CQ tests. T-2 is a card control test. The purpose of the card test is: (1) To obtain the S's normal test pattern without the stimulus of crime Qs; (2) To establish the S's general area of responsiveness; (3) To observe changes in patterns between the relevant Q tests and the card tests; (4) To obtain dramatic responses on the chosen card as a form of deception exposure regarding the issue under investigation; (5) To expose some guilty Ss who try to beat the test by purposely overaccentuating their responses on the chosen card or some other card on the test, and finally (6) The main purpose for the card test is for the stimulation or conditioning effect it has on the S. For example; a guilty S after his chosen card has been identified is more apt on the third test to try to "beat the test" by controlling his breathing or making unnecessary movements. In addition to this, the card test also has the effect of placing the guilty S in greater fear of being caught, and his responses on the relevant Qs become more significant.

An innocent S is reassured when his card is identified and may not respond at all on T-3, or if he does response he will respond on the CQ.

The MQT, usually T-4, is used for the purpose of discounting the possible factors of accidental responses on the earlier tests. For example; a S may be a "spot" responder; i.e., he may respond each time to Q-3. In the MQT, Q-3 is moved to a different position in the test, and another Q is asked in that position, preferably one that showed no response previously. A response in the third position on the MQT to the substituted Q, and no response to Q-3 later in the test will prove that the original responses on Q-3 were unreliable. In addition to this, closer comparisons can be made between the CQ and the RQ.

The known attributes of the MQT are: (1) It permits additional pinpointed pairings of the R and CQ responses. (Examples: Q-5 and CQ-10; Q-3 and CQ-6, etc.) (2) "Spot" responses - see above. (3) The S may have anticipated the asking of certain relevant Qs, and a MQT will help correct this misleading eventuality. (4) The S may be uncomfortable at the end of the test, and some pain reactions may occur. The MQT allows these later Qs to be placed in the fore part of the test.

If the card test contains evidence of some purposeful distortions, a "Yes" test should be used at T-4. In the "Yes" test, the S is instructed to answer "YES" to all Qs in the regular test. (The CQs are eliminated and not used in the "Yes" test.) The "Yes" test evaluates the S's cooperation in that guilty Ss oftentimes try to overaccentuate their responses and in doing so underline their guilt.

If the S does not falsify his card test responses in anyway, the SAT should be used as T-4.

The responses in the SAT are significant even if they appear ahead of time; i.e., before the Q has been completely asked. It appears the S is

formulating the answer in his mind, and, since he has been asked the Q several times before the response is valid even if it appears ahead of time.

The control questioning technique is based upon the emotional weight of the Qs. How important is the Q to the S. Is he in fear of being caught when he answers "NO" to the Q. To illustrate; if you were guilty of stealing $50 from this room and you were asked on the test, "Did you steal $50 from this room?" your answer "NO" to that Q is much heavier emotionally to you than when you answer "NO" to the CQ, "Did you ever steal anything in your life." You are much more in fear of being caught regarding the theft of the $50 than you are when you deny stealing anything in your life. However, if you did not steal the $50, then you would be more concerned about the Q, "Did you ever steal anything in your life?" Your answer "NO" to the CQ need not be a conscious or absolute lie, but if you think about the CQ more; i.e., if you wondered in your own mind if you did tell the truth about it, the doubt would cause a conflict and that conflict would show a reaction that would be greater than your reaction to the $50 Q.

You probably ask yourself, "What if he does not respond significantly to the $50 Q, what then?" If the S responds to a greater extent on a lesser weighted main Q; such as, "Do you know who stole the $50?" the S can be eliminated as the one who actually stole the $50, and, especially, when he explains after the test that he had suspicions about someone else as the one who may have stolen the $50.

Weighted Question Responses

Fig. 170. This is an illustration of the utility of a relevant Q of lesser significance than the main issue Q in those instances where the regular CQ has not served its usual purpose. In this case, the S was a truck driver suspected of stealing an expensive gas stove from his company. At Q-8, he was asked if he had ever stolen any merchandise from the company. He later admitted taking about $10 worth of merchandise from the company. The specific response to Q-8 and the lack of a response at Q-5 clearly indicated the S's truthfulness with respect to the stolen stove. (The M between 8 and 11 signifies an arm movement.)

The following procedure is advocated in interpreting polygraph charts. Look at the chart first for the general response patterns and then ask yourself the following Qs:

(A) What is the S's normal breathing pattern?

(B) Is the S fully cooperating during the test?

(C) What Q shows the greatest response in R?

(D) What Q shows the greatest response in the BP?

(E) Does the S show any responses on the CQ?
(If not, do we need different CQs?)

(F) How does the S respond to the card test?

(G) How does the S's responses compare with his CQ responses?

(H) Which responses are greater and more consistent, the crucial Qs or the CQs?

(I) If the S overresponds, do you think a guilty complex test is necessary?

(J) If the responses are not sufficiently clear as to truth or non-truth is a reexamination necessary?

(K) Does the S purposely try to overrespond when his chosen card is called or when he answers "YES" upon instruction on the "Yes" test?

(L) Does the S try to mislead the examiner in an attempt to beat the test by gross movements when his chosen card is called or when he is instructed to answer "YES" to the pertinent Qs on the "Yes" test?

29 Rules for the Interpretation of Polygraph Records

Most of these rules have special application in the interpretation of the most difficult polygraph charts. As previously stated, 65% of the polygraph responses are not clear and require specialized techniques to properly interpret them.

RULE 1. Allow the S to interpret his own polygraph charts when the polygraph shows reactions on a certain Q. After T-3, ask the S; "What Q bothers you most?" If he names the Q and that Q shows the greatest response, the examiner can follow this lead and use this for his final interpretation. For example; if he says "the knowledge Q" (and that Q did show the greatest response) and, furthermore explains he has some suspicion about someone else, the examiner can use that response and that explanation to report the S innocent of the crucial issue.

The guilty S either denies that any Q bothers him, even though he is showing reactions on the crucial Qs or chooses a Q like the CQ as the one that bothered him most on the test, when actually there is no response on the CQ, he is trying to mislead the examiner by identifying some Q other than the one that actually bothers him. Upon occasion, a guilty S will make a ridiculous claim that a certain irrelevant Q bothers him most.

Even though the crucial Q responses are of small magnitude but are greater in comparison than the CQ responses, the examiner can use the S's misleading explanation "that the CQ bothers him most" as an indication that the S is probably guilty of the main Qs under investigation.

In the same regard, but an indicator of innocence, if the S, before the MQT explains to the examiner that he has a physical disability and gives the examiner evidence of medical treatment, this belated explanation is typical of an innocent S's comment.

RULE 2. Erratic or Inconsistent Responders, (in which the examiner has no basis on which to make a comparison because of the irregular responses) may be due to one of several reasons:

(a) The S may be innocent but praying on the test to further assure passing the test. Fig. 213. Record of a woman suspected but innocent of a $3000 theft who prayed during the test. From the very beginning of the test, the examiner observed that the S had her eyes closed. After irrelevant Q-4, she was asked at X, "What are you thinking about?" She made no answer but opened her eyes. Q-4 was repeated. At Y, she was observed to close her eyes again. At Z, she was told to open her eyes which she did. Following the test, the S stated she was praying during the test to insure an accurate result.

WARNING: DO NOT ALLOW A S TO KEEP HIS EYES CLOSED DURING THE TEST. Prevent, if possible, fervent prayer or prevent, if possible, the S's concentration on mental images with the eyes closed.

(b) An innocent S who is trying to keep his mind blank and, in doing so, is destroying the natural responses which are forthcoming. (Do not instruct a S to try to keep his mind blank!) That is harder work than thinking, and can cause greater disturbances in the records.

(c) The S may be innocent of the crime under investigation, but guilty of some other crime. (Discuss this possibility with the S, and promise to keep another crime admission confidential [if you can]. A disclosure of this sort usually clears the chart. By all means, if a promise is made of a confidentiality, respect that confidence the same as a doctor would hold the confidential disclosure of a patient, or confidentiality a lawyer would keep for his client.)

(d) The S may be disorganized mentally because of some personal problem not related to the crime under investigation. (It is necessary to discover the root of the problem, and either promise to keep the answer confidential or agree to assist the S in his personal problems to relieve his worries.)

1. See Eviction Case - S's test disturbed, concerned about eviction, but not about loss. See Page 220, T & D.

2. Pregnancy - Bank Teller was upset on the test. Examiner learned S feared exposure regarding her pregnancy and her boyfriend would not marry her prior to the child's birth.

(e) A guilty S may be purposely trying to divorce his mind from the test, or is attempting to think of other things to avoid detection.

Fig. 211. This S was examined regarding a sex offense involving a child. Qs 1, 2 and 4 are irrelevant. The relevant Qs are 3 and 5. The slower blocked R pattern on the irrelevant Qs suggested the probability of an attempt to evade detection either by a physical R effort, or by mental sets and attitudes. Following the interrogation, based upon an assumption of lying, the S confessed to the crime, and also admitted that when he was asked the irrelevant Qs 1, 2 and 4, he concentrated on the crime; but that when he was asked the relevant Qs he thought about the irrelevant ones. In addition to confessing this one crime, the S confessed to 17 other sex offenses against children. He said, "with a little practice I'll bet I can beat your machine."

SUGGESTION: The erratic or inconsistent responder should be asked; "What were you thinking about during the test?" If he explains he was praying, or trying to keep his mind blank, etc., he should be warned to think of the Qs asked, and if he is telling the truth his truthfulness will be proven. After additional tests this type S usually follows instructions and passes the test. The guilty S, on the other hand, will not admit to "Change His Thoughts," or any other type of evasion and should be given a reexamination at another time. On the reexamination, the S may persist in the same kind of mental gymnastics and further point to his guilt, or may significantly respond to the main Qs and clearly reveal his guilt.

Three out of four Ss whose records are erratic have proven to be actually guilty of one or more of the issues under investigation, so as a last resort, interrogate the S with the aim of obtaining a confession or admission. Homosexuals, innocent or guilty, generally indicate erratic reactions probably due to an emotional flaw.

RULE 3. If a S dramatically responds to all Qs, including the CQ, or if the S responds significantly on the main Qs, but his behavior symptoms or the facts in the case seem to eliminate him as innocent, a guilt complex test should be given to determine the validity of the responses.

Fig. 99. Records of a murder suspect who had been tested earlier by an unskilled examiner who was of the opinion that the S was lying regarding the matter under investigation. On the first test by the second examiner, Record A, the S continued to give a specific BP response at Q-5 when asked; "Did you kill Alderman Gross?" Observe, however, that he also gave a similar response when asked about a fictitious murder at Q-5A on T-F, which test results nullified the earlier response at Q-5 on A. (Incidentally, after the test, his alibi proved that he was in California at the time of the murder.)

Fig. 105. Records of a S suspected of pickpocketing. Although his first records, like A, seemed clear in their indications of deception, the S's behavior symptoms were more consistent with truthfulness. The guilt complex T-F resolved all doubt by reason of the far greater response to relevant Qs 3 and 5, than to fictitious crime Qs 3a and 5A, thereby definitely indicating the S's deception.

RULE 4. Behavior symptoms should be taken into consideration in arriving at a diagnosis of deception, but if the polygraph records very clearly indicate truth or deception, they should take preference over contrary behavior symptoms.

Fig. 187. An illustration of the principle that whenever the polygraph records very clearly indicate deception, they should be given precedence over the S's behavior symptoms of truthfulness. In this case, despite the very specific responses to relevant Qs 5 and 8, the examiner was cautious about making a diagnosis of deception because of the S's vehement denial of involvement. A reexamination was arranged, as is a good practice in such instances. When the S appeared for the reexamination, he admitted his prior deception as soon as he entered the examination room.

RULE 5. An angry S may show deception responses even though he is innocent.

Fig. 221. Another illustration of the fact that a truthful person's anger or strong resentment may produce responses which could be misinterpreted as deception criteria. The S in this case was the manager of a store in which a hidden money box had been stolen. Because only the owner and the manager knew where it was hidden, the owner not only suspected, but actually accused the manager of taking it. When the manager appeared for his polygraph examination, his anger and resentment were clearly apparent. For research purposes, the examiner decided to conduct a test without first trying to alleviate the S's resentful attitude. Observe, on A the specific BP responses at relevant Qs 3 and 5; then contrast A with the S's third test C, before which the examiner devoted some time to alleviating the S's resentful attitude. On C, note the specific R and BP response at CQ-6, but the absence of any comparable indications of deception at Qs 3 and 5. A subsequent polygraph examination of the store janitor revealed his deception, and resulted in his returning the missing money.

RULE 6. Unresponsive Ss who appear to be mentally competent, are usually innocent of the matter under investigation. Innocent Ss are sometimes abstract in their thinking, and are unconcerned about the results. They are confident the test will prove them telling the truth. As a result of this unconcern the S's polygraph records are unresponsive.

RULE 7. A guilty response may not be a deception at all, but it may be a "spot" response. A spot response will occur at one place on the chart regardless of the Q asked at that spot. A change in the position of the Qs in a MQT, and a change in the order of the Qs will prove whether the response is a spot response or not.

Fig. 168. Case illustration of a truthful S's "spot" response to the first relevant Q on any test. On this theft, the suspect's first Record A (shown here in two sections), she responded in R to the first relevant Q-3, but not to the related relevant Q-9. On MQT-D, observe the R response at Q-9, the first relevant Q, but the lack of a response at the second relevant Q-3. Consequently, the S must be considered a "spot" responder rather than a liar as regards the matter under investigation.

RULE 8. A deception response to be valid in BP must start immediately before or after the S's answer, but if it is several seconds before or after the answer, it probably is an invalid response. A deception response in R to be valid must start at the time of the S's answer, or one second before or after; but if any more time the response probably is not reliable for a deception diagnosis.

Fig. 166. An illustration of the non-significance of a R response preceding the completion of a Q, in comparison with the significance of a R response when it occurs after the Q is completed and answered. In this R tracing of a theft suspect, observe the responses at relevant Qs 3 and 5 preceded the completion of the Qs, whereas the R responses at CQ-6 occurred after the completion of the Q and answer. The S was telling the truth as to Qs 3 and 5, and lying as to Q-6.

RULE 9. If a S delays his answers to test Qs or answers prematurely, it usually indicates an attempt at deception. A late answer to irrelevant Q-4, indicates deception on relevant Q-3. (The deceptive S after answering Q-3, has a mental block regarding his deception on Q-3, and is

unable to coordinate sufficiently to answer on time to Q-4. As a matter of fact, he may not answer at all on Q-4 because he did not listen to the irrelevant Q-4 as the result of fear of being detected for his deceit on Q-3. This seems to appear only on Qs 3 and 4, and not later in the test; and usually it is the first time Qs 3 and 4 have been asked.)

RULE 10. Do not try to compare responses that occur on separate tests and, particularly, do not try to compare responses that occur in separate examinations for purposes of determining truth or deception. (For example, in 1939 a S confessed a rape after a polygraph test. Four years later, he returned for tests on another rape charge. On this test, the S's responses were materially reduced compared to his charts four years previously. He was reported innocent based on showing lesser responses on his second examination. Later, it was proven the S was guilty of the second rape as well. On the second examination, the S felt sure the polygraph would show his guilt and, therefore, his fatalistic attitude was the cause of his unresponsiveness.

RULE 11. Do not compare responses that occur in the pertinent Q test with responses that occur in the card test. Peculiarly enough, a S who responds to a greater extent on his chosen card than he does to the pertinent Qs, including the CQ, is usually guilty of the pertinent Q under investigation. (For example; William Heirens murdered three persons. Prior to his confession he was tested. The tests regarding the murders showed no response at all, but his card test reactions were very significant on his chosen card.)

RULE 12. It is possible to make an interpretation on charts that have regular BP-pulse irregularities; but it is impossible to interpret a BP-pulse chart with irregular irregularities. (For example; a S who has extra systoles and they come at irregular intervals cannot be interpreted in terms of truth or deception. However, see Fig. 72, where regular heart beat irregularities occurred in pertinent Q T-1, and the card test probably because of apprehension and fear that the test would not work properly; and after the chosen card was called and the S was assured of the test's accuracy, T-3 showed no heart beat irregularities at all.)

(In Fig. 71, the opposite situation occurred. No heart beat irregularities occurred in T-1 or in the card test. After the chosen card was correctly identified, heart beat irregularities showed in T-3. The identification of his chosen card proved to him the test was accurate, and this placed him in fear of being caught and the irregularities appeared. The S confessed after the test.) This shows the true value of the card test stimulation.

Another possible exception: If extra systoles appear only at Q-6, the S can be reported as qualifiedly telling the truth on the main issue, based on the fact the S indicates extra excitement on Q-6, the CQ. However, if the same responses occurred on Q-5, the examiner cannot use that exciteable response to report the S guilty.

RULE 13: As between the two principal tracings of R and BP, the R is a more reliable indicator of deception. (With intelligent, educated Ss, BP responses must be accompanied by some sort of disturbance in the R, even though these disturbances are not deception responses in themselves.

Unintelligent, uneducated Ss; however, may indicate deception in the BP recording alone without any accompanying changes in R.)

(In addition to the normal deception responses forthcoming from the R recording, the guilty S is more apt to try to beat the test by controlling his breathing in one of a number of different ways. For example; he may purposely slow down his breathing to 6 or 8 cycles per minute as opposed to the normal 12 to 20 cycles, or he may increase his breathing to 40 cycles per minute, or he may increase or decrease his R amplitude, and by doing so, obviously indicates he is attempting deception.)

Fig. 195. Records of a man suspected of killing his wife and three children. On his first T-A, observe the distortion in both the R and BP-pulse tracings. X is a portion of his normal R pattern recorded between his first test and his card test, and during a period when no Qs were asked, and while the BP-pulse cuff was deflated. On B, a portion of the S's R tracing during his card test; note the abnormal breathing, and the exaggerated suppression at his chosen card marked by the arrow. On C, the R tracing on T-3 (the repeat of A), observe the abnormally heavy rapid breathing throughout. All of this clearly indicated his deception regarding the killings.

The only way an examiner can identify a S's attempt to beat the BP recording is by gross movements of the arm to which the BP cuff is attached, or by muscular flexing of the biceps. Sometimes, the S can explain these movements by claiming BP cuff discomfort. Also, he can tense at the beginning and not release tension until he moves.

RULE 14. Adjust the BP recording so the Diacrotic Notch appears near the center of the pulse beat. (In some few cases this adjustment is impossible, and the examiner must settle for a reasonable good amplitude without regard to the position of the Diacrotic Notch.) If the Diacrotic Notch appears too high in the pulse beat recording, the pressure is too low. This type of recording usually is too erratic to read, and usually deception responses are not identifiable. If the pressure is too great, the Diacrotic Notch appears at the bottom of the pulse beat. Deception responses can occur with an overinflated BP, but the S may experience pain and destroy the deception criteria.

IMPORTANT: To obtain a proper BP recording after inflating the cuff, lift the S's BP cuff arm, straighten it out, gently shake it to be sure it is in a relaxed position, and then place it back on the arm rest. While doing so, observe the pressure gauge, and if the BP drops 5 to 15 mm, the arm is sufficiently relaxed for the test. If a noticeable BP change does not occur, even though the S's arm appears relaxed, instruct the S to relax his legs also. Usually a drop in BP will be noted. If this procedure is not followed, and the S's arms or legs are tense, the chances of obtaining any BP reaction is at a minimum. The false pressure retained by the S in this instance masks out any possible BP responses which may be forthcoming, and materially reduces the effectiveness of the BP recording.

Fig. 262. Note the slight BP response at Q-5 on this record of a sex offender, in contrast to the much greater response at Q-8, which was a repeat of the same Q. The difference in responses may have resulted from a release in muscular pressure after irrelevant Q-5a, as seems to be

indicated by the sharp drop in the baseline at that point.

REMEMBER: If the S is completely relaxed, the only way his BP responses can go is "up."

SPECIAL PRECAUTION: In this same regard, if the BP cuff is adjusted to the S's arm over some type of injury or painful disease, a normal BP response cannot be obtained. The same is true if the pneumograph tube is placed over a recent surgical scar; a normal response in breathing is impossible. The pneumograph tube should be placed over the diaphragm of the female S because some are especially sensitive to the pneumograph tube pressure. (See girl student who was tested before her class in Puerto Rico in an experimental demonstration of the polygraph. Her polygraph tests were most erratic, and incapable of interpretation. After the test, it was learned she was suffering from mastitus, breasts very sensitive and actually sore during menstruation.) She was unable to disclose this fact to the examiner before the class, but did tell the examiner after the class was dismissed. (In applying the BP cuff or pneumograph tube, the examiner should ask the S; "Does that feel okay?" And, if there appears to be any doubt, change the position of the attachments. This precaution is necessary, otherwise, a silent, suffering innocent S's pain reaction may be confused with guilty reactions, or more likely, it may mislead the examiner in believing that these "pain" reactions are purposeful efforts on the part of the S to "beat the machine.")

RULE 15. The majority of the times, a nervous S who has a serrated R pattern is guilty; but usually there is additional indications of deception in the polygraph records as well.

Fig. 218. (Record of a nervous, lying S whose nervousness, as well as deception regarding an embezzlement, are clearly revealed in the R tracing. Note particularly the suppression at Q-3, the "relief" at Q-4, and the suppression at Q-5.)

Cyclical BP responses which occur throughout the record at regular intervals, are indications of a nervous S as revealed in his BP recordings. No conclusion can be drawn as to the guilt or innocence of the S if his BP recording indicates a nervous pattern alone.

Fig. 216. Record of a woman who was suspected, but innocent, of implication in a burglary. Observe the indications of "nervousness" in the rather uniformly irregular nature of the BP changes throughout the record except at CQ-6, to which she gave a specific response in both BP and R.

RULE 16. Hyperventilation or overbreathing causes a cyclical BP pattern which resembles a nervous BP pattern, but actually is not. If the S has been purposely overbreathing, it is a good possibility the S is guilty of one or more of the issues under investigation.

Fig. 196. Records of a clergyman who was lying about a sex motivated murder for which he was suspected. Observe on D, the MQT record, his normal R tracing at Q-11, in contrast to the other portions of the tracing. Q-11 was one which he had answered truthfully; it was whether he had seen the deceased shortly before her disappearance, which he had previously admitted. On D also note, except as to Q-11, the way in which he was

indulging in an effort to deceive the examiner. As evidence of the fact that the breathing pattern in D is abnormal, note what happened to the same S's breathing on record X, when he was left alone in the examination room with the BP-pulse cuff deflated, but with the instrument continuing to record his R.

The serrated nature of the R tracing in D presumably resulted from the slight tremors he experienced as he indulged in his concentrated efforts at controlling his R.

RULE 17. If the S purposely tries to falsify his responses by overbreathing, or if he otherwise controls his breathing, do not attempt to make a comparison using the CQ technique. After warnings to cooperate, if the S persists, he should be reported guilty of one or more of the matters under investigation. Do not try to identify exactly which Q or Qs he is not telling the truth about.

RULE 18. A majority of the times, a S who takes a deep breath each time he answers the pertinent Qs is guilty.

RULE 19. It is much easier to establish a S's innocence by the polygraph test than guilt, because as a general rule the innocent S is much more cooperative and mentally at ease. The guilty S; however, may be distraught due to his guilt or he may engage in a considerable amount of psychological evasion to avoid detection. This frame of mind may confuse the test records and cause the examiner to complete the full series of tests before making a report indicating deception. If the examiner suspects that the S is purposely trying to "beat the test," he must do everything possible to prove to himself that the disturbances causing erratic records are falsely induced and not caused by some unidentifiable emotional defect. (Experience has indicated, however, that three out of four polygraph charts that are difficult to diagnose with no apparent mental, physical or emotional defect, are guilty of the matter under investigation.)

RULE 20. (Procedural) The Q must be direct and unambiguous and must be able to be answered "YES" or "NO," otherwise deception indications may be misleading.

RULE 21. The Q must not be vulgar, especially with a female S, because she may become resentful and cause false deception responses.

RULE 22. The Qs must be asked in an even, well modulated tone with no special voice inflection in any section of the Q as compared to any other section. No special emphasis should be placed on one Q as against another.

RULE 23. To establish reliability, it is necessary to have at least two pertinent Q tests, and that valid deception responses (i.e., known patterns of deception are consistent and appear more than once.) Oftentimes verified innocent Ss show guilt reactions on the first test; therefore, it is good sense to run additional tests.

RULE 24. (Procedural) The number of Qs must be limited to reduce the possibility of pain reaction in the latter part of the test. (The

polygraph cannot do everything, it has limitations.) Check to see if it is pain reactions by placing the letter Qs up in front on the MQT.

RULE 25. (Procedural) The length of the Q must be limited, so the S is not confused at the time of his answer causing the response to be invalid. (If the Q must be a long one by agreement with the S, certain information can be "bracketed out" and not read when the test is actually run. For example; consider this test Q. "On January 16, 1954, at 10 A.M., did you say to Mary Galloway Henning, 'Henry's Will has been found and Nellie Ford, Willie Grand and Bessie Lott fraudently agreed to burn the first two pages of the Will so that Mary's son Jimmie would not inherit anything?'" By agreement with the S, after fully reading and discussing the Q, it can be asked on the test: "Did you say to Mary, that Nellie, Willie and Bess agreed to burn the first two pages of the Will?" The complete Q will be typed by the secretary even though it was actually not read to the S on the test.

RULE 26. If the S has a chronic physical ailment; such as, a defective heartbeat and a severe respiratory ailment, the chart cannot be interpreted. However, if the S has one chronic ailment; such as, a defective heartbeat, but the respiratory recording is normal, a valid polygraph test may be given using the R alone. I.e., if the S is responsive in the R tracing. (See. Fig. 223.)

RULE 27. If the S is clearly a mental defective, do not attempt to make a determination as to truth or deception regardless of how clear cut the responses are indicated. The S should be interrogated; however, and, if he gives a confession that is corroborated by the physical evidence, the confession is valid. (Broomstick Murder Case -S's records indicated deception, but S was actually insane. S confessed and related facts unknown to anyone except the perpetrator and the investigator. Both the test and confession proved valid.)

RULE 28. (Procedural) The examiner must not interrogate a S prior to a test with the aim of obtaining a confession, because the polygraph records thereafter will be unreliable. If the examiner prematurely interrogates a S when he intends to additionally test him, the test should be delayed for several hours or preferably delayed until the next day. (However, this rule does not apply when a POT test is contemplated.) For this reason, one examiner should not testify on another polygraph examiner's records unless he knows or is told what transpired before the tests. Accusations by the polygraph examiner or by an investigator before the tests can invalidate test responses.

RULE 29. We must recognize that the olygraph, like all other disciplines that measure human behavior, is subject to error. It is impossible to absolutely prove the number of errors committed because we cannot verify all charts as to truth or non-truth. We estimate, however, that we have about a one percent error probability, although our known error is far less than that. We will never have perfection in polygraph testing because to have perfection we need a combination of three things:

1. A perfect instrument which will automatically reflect the exact responses.

2. A perfect S; i.e., normal physically, mentally and emotionally.

3. A perfect examiner; one who is incapable of making an error.

FINALLY: Interpretation of Test Records Using the Reid Technique.

Fig. 121. Series of test records on a S suspected of theft of portable radios and television set from his employer. On A, the S's first test, he was asked at Q-3 whether he had stolen the radios; at Q-5 he was asked whether he had returned the one television set he admitted having taken from his employer's store; at Q-8, "Besides the one TV, have you stolen any other TV's from the company?" Qs 4 and 7 are irrelevant; and 6 is the CQ, "Besides what you told about, have you ever stolen anything else in your life?"

C is the S's third test, a duplicate of his first one A. On both test records, observe the very definite indications of deception with respect to the relevant Qs.

D is the MQT record, on which there are very specific deception responses at Qs 3, 5 and 8; as well as a clear indication of the S's efforts to evade detection by his overbreathing or hyperventilation at irrelevant Qs 1 and 2. Q-10 related to knowledge of other employee's stealing, and his "NO" answer appears to be a truthful one. The premature suppression at Qs 5 and 8 is an illustration of the previously noted exception to the general rule that a R response to be significant must occur at the point where the Q was answered. Here, the S was indulging in a hyperventilation evasion effort.

E is the "yes" test record. Observe the evidence of deliberate muscular movements at relevant Qs 3, 8 and 9. His purpose was to simulate a "lie" response when he answered these Qs truthfully. (I.e., "YES" as to stealing the radios, TV's and other merchandise.) No such effort was made at Q-5 because he wanted, of course, to have his lie answer show up as a truthful one; this was the Q as to whether he had returned the one TV that he admitted taking.

Fig. 120. Records of a suspected murder of three women (all on the same occasion), while they were vacationing at a summer resort. The records illustrate the value of conducting a complete series of tests; including in particular, the card test and the "yes" test. This S was examined shortly after the crime by a police examiner who used only the obsolete relevant-irrelevant test procedure, and who did not employ either the CQ test, the card test, or the "yes" test. He reported the S as telling the truth.

Several months later, another examiner (Stephen Kindig of John E. Reid and Associates) proceeded to reexamine this same S (an employee of the resort at the time of the murder), along with a number of other persons. On the basis of the new group of records, the S was reported to be untruthful. He, subsequently, admitted the triple killing, and is now serving a life sentence.

Observe on A, the absence of any indication of deception when asked relevant Qs 3, 5, 8 and 9. Note; however, that the record is also devoid

of any significant responses to CQ-6. On his card test (not shown), the S indulged in muscular movements when his chosen card was mentioned (originally, as well as when the chosen card Q was repeated a second and a third time.) Then on his third test C, a repeat of A, he indulged in arm movements at irrelevant Qs 2, 4 and 7, and also at relevant Q-8. On this test, he also gave a significant R response at Q-3, as well as a BP response at Q-5. D is a MQT record, on which the S indulged in arm muscular movements at irrelevant Qs 1, 2, 4 and 7. E is the S's "yes" test record, on which he moved considerably when asked relevant Qs 3, 5, 8 and 9, and CQ-6. He also gave significant responses in R at Qs 3, 5 and 8. NOTE: In contrast, however, the relatively normal R tracings at irrelevant Qs 2 and 4, and although delayed, at irrelevant Q-7 also.

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THE MAKING OF A POLYGRAPH RECORD

By

John E. Reid

INTRODUCTION

A. The Compilation of Evidence -

1. History of the case.
   a. Sufficient background for the X to know the facts in the case.
   b. Have any details been withheld from the S? (POT test possibility)
   c. Has the S been abused in any way?
      1. Denied food or sleep.
      2. Threatened by investigators prior to coming for tests.
         a. "If you don't pass this test we'll break you in two?"

2. Greetings to the Subject.
   a. Impersonal but friendly. (X must maintain a professional attitude.)
   b. Not maudlin or too "buddy buddy" friendly.
      1. Release S's tension and defeat test.

3. Signed Agreement to take Test.
   a. Tests are completely voluntary.
   b. S is told each and every Q before the test before being asked for his agreement to take the test.
      1. There are no surprise Q's in a properly conducted PX!
      2. S's privacy is not invaded because he agrees to it.
   c. No Miranda warnings needed if S is not in custody.

4. Adjustment of the Instrument and Attachments.
   a. Relax B.P. arm after cuff is inflated.
      1. If not, a false B.P. base will be recorded defeating the possibility of any natural B.P. rises.
   b. Adjust G.S.R. settings and balance immediately.
      1. Allow G.S.R. to adjust to body temperature.
   c. Loosen and free the pneumograph tubes.
      1. Need good amplitude but not too excessive.
      2. Tubes must not be too tight to cause pain.
   d. If instrument is improperly adjusted in any manner the polygraph records will be without validity.
   e. If the polygraph instrument is not functioning properly, the tests should be abandoned until the malfunction is corrected.

This paper was presented at the Seminar of the American Polygraph Association in Atlanta, Georgia, August 1971. The letter X is for examiner and S for subject. Similarly, B.P. is blood pressure; G.S.R. is for Galvanic Skin Response (electrodermal); Qs is questions; PX is polygraph examination; PT is polygraph test.

B. Behavior Symptoms

1. General appearance of the S.
   a. Straight forward.
   b. Casual.
   c. Direct.

2. Appearance of the S's eyes.
   a. Stares-maybe angry or mentally defective.
   b. Are the eyes clear or strained looking?
   c. Does the S look directly at you or not?

3. Manner of speaking.
   a. Does S talk directly or evasively?

4. Types of movements.
   a. Easy or uneasy.
   b. Cross and uncross legs.
   c. Shifts around in the chair.

5. Attitude.
   a. Agreeable or resentful.
   b. Angry or friendly.

6. Demeanor.
   a. Nervous or placid.
   b. Cooperative or non-cooperative.

7. Intelligence.
   a. Apt or stupid.

C. Preparation of the Test Questions -

1. Direct and unambiguous requiring only a "Yes" or "No" answer.

2. Answers to irrelevant Qs must be known truths.

D. Voice Communications by the X -

1. Clear well modulated tone.

2. Not soft, disinterested, apologetic or accusatory.

E. Stimulation -

1. Strong enough to cause the S to respond.

2. Subtle enough to cause the S to respond to the Qs involving deception.

Objectionable Stimulation -

1. Accusatory stimulation before the tests have been completed.

2. Upset the S so that no further tests can be administered.

a. Angers the S. causing false responses.
b. Causes the S to become emotionally unresponsive.
c. Causes the S to respond emotionally.
d. Causes the S to unreliably over-respond.

RULE: Complete all P tests first. Make a decision as to whether the S is truthful or untruthful. If truthful dismiss the S; if untruthful interrogate with the aim of obtaining a confession.

F. Identification of Polygraph Records -

1. Identify each chart taken out of the polygraph - S's name, date, location of test, and X's name.

2. Note the B.P. sphygmomanometer setting before and after each test, and check the G.S.R. as to mechanical or self-centering adjustments.

3. Identify each chart number.

4. Identify by number each Q on the chart corresponding to the test Q sheet and each answer on the test and if the S answered beforehand, on time or late.

5. Note on the chart anything the S did on the test, such as; C.T. S laughed, yawned, etc., and at the place it occurred.

6. Any adjustments of the pens made by the X or any error caused by him in the test Qs.

G. Interrogatory Regarding the Physical, Mental and Emotional Condition as well as the Extraneous Items that could Effect the Test Results -

1. Is the S physically able to take the PX?
   a. Does the S's B.P.-pulse R. recording appear to be normal - such as you have observed before in other PX?
   b. Does the S's B.P.-pulse or R. appear to be abnormal - such as you have observed before in prior PX?

NOTE: PXs are able to identify an abnormal or defective B.P. or R. recording, but are unable to indicate the medical reasons for such disability.

2. Is the S mentally and emotionally capable of taking the PX?
   a. The S's R. responses are not erratic as previously observed in Ss who have had some mental or emotional defects.
   b. The S appears to be normal in his whole demeanor and answers Qs in an intelligent manner.
   c. The S indicates a capability for reasoning by his conversation prior to the tests.
   d. The S does not appear to be abnormally nervous.
      1. The S's B.P. or R. patterns do not indicate nervousness.
      2. His voice does not quiver.
      3. His body does not shake.

4. His hands are steady.
5. He does not appear overly apprehensive.

e. The S does not appear to be overly distraught.
f. The S answers Qs at the proper time and without delay.
g. The S sits quietly and calmly during the tests.

3. Is the S under the influence of drugs or other medications?
   a. The S denied taking drugs of any kind prior to the tests.
   b. The S answered his Qs intelligently and without delay prior to the tests and during the tests.
   c. The S's power of concentration appeared normal.
   d. The S appeared wide-awake (not drowsy).
   e. The S intelligently and actively conversed with the X before the tests and indicated he was fully in possession of his faculties.
   f. If the S took any sedatives prior to the tests it appeared the amount was insufficient to emotionally effect his tests.
   g. If the S took any stimulant prior to the tests he did not appear to be over-animated. If the S took some stimulant it should have increased his response sensitivity.

4. Is it possible that something of an extraneous nature may have effected the PT results?
   a. The tests were given under controlled conditions.
   b. The temperature of the room was constant and the air was regularly circulated.
   c. The room itself is semi-soundproofed to eliminate outside noises or disturbances.
   d. The X and the S were the only persons present in the room when the tests were administered.
   e. There are no unnecessary distractions in the room itself by way of special adornments.
   f. There are no telephones or other sound distractions in the room itself to cause false stimulation.

H. Interpretation of Polygraph Records - Interrogatory Regarding PT Results - (It is comparatively easy to report a S as telling the truth, but when you report a S as not telling the truth you must be as reasonably certain as possible that you are correct.)

1. Are the S's responses normal in your opinion?

2. Does the S's behavior symptoms and his PT records match one another?
   a. Do both indicate he is telling the truth or do both indicate he is not telling the truth?
   b. If the S's behavior symptoms and the polygraph records do not agree, arrange for a reexamination to be conservative.

3. Did the S cooperate to the best of his ability during the tests?

4. Is the S unresponsive?
   a. Did you stimulate him to increase his responsiveness?

5. Is the S overly-responsive?

a. Did you test the value of these responses by a GC test?

6. Did you have an opportunity to administer a POT test?

7. Did the S attempt to "beat the machine" by any obvious means?
   a. Card test.
   b. Yes test.
   c. Control breathing.
   d. Hyperventilation.
   e. Flexing biceps or tensing his muscles.
   f. Secretly muscular movements (See Muscular Movement Recorder.)

I. Interrogation Interrogatory -

1. Did you give the proper Miranda warnings if the S was in custody? (No warnings are necessary if the S is not in police custody.)

2. Did you threaten the S in any way to cause him to confess?

3. Did you promise the S immunity to get him to confess?

RULE: Did you say anything or do anything that would cause an innocent person to confess; if so the confession is not admissible as evidence.

J. Confessions -

1. Did you include some special facts or fact in the confession that could not have been known by the X and had to be supplied by the S?
   a. Family history fact. For example, "Where is your grandfather buried?" Answer, "In St. Mary's Cemetery in Mundelein, Illinois."
      1. The answer to this fact proves the X did not write the Q and A himself, but that the S answered the Q.

2. Is the confession corroborated by outside evidence?
   a. For example, the S tells where the gun is hidden that was used in a shooting, or
   b. Factual information that can easily be corroborated; such as, S states in confession "I bought 2 1/2 gallons of gasoline from the ARCO Station a half-hour before I shot Jones." (Jones was found dead two blocks away.)

3. The signing and witnessing of the confession.
   a. To prove the S's confession was read to the S, typographical errors are corrected and initialed by the S. These corrections should appear at least once on each page.
   b. The S must agree that he was not threatened or promised anything in order to confess.
   c. The confession should be witnessed by at least two responsible persons.

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POLYGRAPH PROCEDURAL INFORMATION

By

John E. Reid

In order to obtain readable polygraph records it is necessary to correct certain actions on the part of the S during the tests.

If the S is moving around during the test or looking at the instrument he can be warned after Q-2 to stop these actions or to look straight ahead, and if he does not the X must stop the test, stand in front of the S and tell him to refrain from moving and to look straight ahead during the test. He should be told that these actions affect the test and could cause a defective recording.

If the S makes late answers to the test Qs it is usually an indication that the S is not telling the truth and is doing some mental gymnastics before answering the Q. The S can be corrected either by allowing him to late answer during T-1 and observe as to whether he will late answer also during the card test. Sometimes the S will late answer on T-1 and will not late answer during a card test which will indicate to the X that he is attempting to beat the machine by certain mental gymnastics as previously stated. The other possibility is to allow the S to late answer through Q-6 and then stop and confront the S regarding the late answer stating that it is unnecessary to do so and reminding the S that he did not late answer during the pre-test interview and since the Qs were reviewed with him beforehand there is no reason to late answer on the tests. This same instruction should be given to the S if he late answers through T-1 and the card test.

If the S closes his eyes during the test the X should stop the test after Q-2 and instruct the S to keep his eyes open during the test. Usually Ss close their eyes during the test to recite prayers and in doing so will confuse the polygraph test records. Sometimes these Ss are innocent but are in the habit of praying and closing their eyes for sincerity during prayer. At any rate it affects a normal recording and is objectionable.

If the S makes loud answers or loud answers that appear to be angry answers to the test Qs the X must stop the test after Q-2, stand in front of the S and state, "When I ask these Qs I am not accusing you. I am only interested in obtaining your normal test reactions when you answer your Qs. Your loud answers unreasonably disturb the test and these normal recordings. So just answer in an ordinary tone of voice and if you are telling the truth the test will clearly show that. If you continue to answer loudly the test may show certain reactions that are false and may cause me to make a mistake and report that you are not telling the truth. So just answer in a normal tone of voice and be fair to yourself!"

This manuscript has not been previously published.

The S who answers on top of his breath; i.e., takes a deep breath, gives his answer and then exhales causes distortions in the R pattern and prevents the X from making an accurate deception determination. Ordinarily these efforts are made by guilty Ss. It is well, therefore, to allow the S to answer on the top of his breath through the first six Qs, and if he persists in answering on the top of his breath during these Qs he should then be confronted and advised to answer as he did orally in the pre-test interview when Qs were asked of him and he did answer normally.

Another procedural method with this type of S is to allow him to answer at the top of his breath during T-1 and also through the card test. This method is used to find out whether the S will answer at the top of his breath during the card test. If he does not, the X can be assured that the S is attempting to evade the Qs by this method of answering and is probably guilty of the matter under investigation. After the card test however he should be given the instruction to answer in a regular manner as previously described.

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INTERROGATION PROCEDURE

By

John E. Reid

ACCUSATION:

The X stands in front of the S and while looking him in the eye says in a clear unequivocal tone of voice, "This test shows you are not telling the truth! I am going to take these attachments off and get this thing straightened out because you are not telling the truth Joe!!" (Be gentle but direct and forceful enough to be heard.)

TIMING:

The X then silently busies himself removing the BP cuff, the pneumograph tubes and the GSR electrodes, and takes time to place them in their proper holders on the side of the desk. While doing so the X closely observes the S, listens to his comments and watches his reactions. If the S, after hearing the accusation appears to be uneasy, crosses his legs, vaguely says, "What do you mean?" or "What did you say?" or "But I answered all the questions," or even says nothing but looks somewhat blank, the X receives the necessary assurance and encouragement to become even more direct in confronting the S as guilty. At any rate, the X delays before sitting down in front of the S allowing sufficient time for the observation of the S. After pulling up a chair and sitting down in front of the S, the X again says but even more forcefully, "Joe, you are not telling the truth and I'm going to straighten this thing out with you!"

It is essential to understand the guilty S's state of mind when he is met with this "head to head" confrontation. All the S's rehearsed defenses; such as, the effort to maintain a calm composure, a planned story, or a good alibi, are shattered by the unmasking of the S, and; therefore, he does not really hear all that the "I" has to say. Because of the S's somewhat disorganized mental state it is necessary for the "I" to be patient, persistent and most repetitive in his questioning of the S at this time.

THEME:

To proceed the "I" must have the proper approach to fit the type of offense and the type of S. As a general rule, place the blame on someone or something else other than the S himself, because it is impossible to expect the S to confess unless he is allowed to "save face" or have a "crutch" to lean on. Therefore, as an example in the IN of a suspected

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Symbols: I = Interrogator; IN = Interrogation; P = Polygraph; S = Suspect; V = Victim; X = Examiner.

This manuscript has not been previously published.

embezzler place the blame on the employer for not paying sufficient wages, or in a rape case place the blame on the V for enticing the S by the manner of her dress, or the suggestive way she walked. (If the theme does not seem to work, switch to another theme. You can tell whether or not you have chosen the proper theme by the S's facial expression or by his stated objection.)

The X can also establish rapport with the S by telling a story about himself that allegedly happened under similar circumstances. For example: The X may say, "I can understand what happened here and I really can't blame you. I recall a similar situation involving myself where I got in trouble and lucky for me I talked to a retired policeman. He was a kindly old guy and he said to me, 'So you did something out of the way. Just remember he said, none of us are angels. You just made a mistake and I know you won't make another mistake like that again!' You know I'm glad I listened to that old policeman and I did straighten it out, and I never got in that kind of trouble again. Joe the same with you, let's get this off your mind. I know you have a good reason why it happened and even if your reason isn't so good, I am sure you won't do this again!"

Retain the Subject's Tension: i.e., during your enthusiasm to make your theme proposals clear to the S gradually pull up closer to him until your legs semi-circle the S legs and your hand is close enough to be placed on his shoulders. This position commands attention and in doing so the S is less likely to unnecessarily move and release his tension. (If the S attempts to cross his legs, dust his trouser or shift in the chair, these are indications that you are making progress in retaining the S's tension, so continue to do so while you are enthusiastically making your point.)

Keep objects such as pencils, paper clips, etc. from the S. If he handles them or plays with the pneumograph chain, take the object away from him, but do so gently and without any comment. (It is best to remove these items if you can before the IN starts and eliminate the necessity for removing them from the S during the IN.)

Stop the S from denying his crime too often by saying, "I'd like to tell you the whole story first and then when I have finished and you know what I have to say you can then answer." A good "I" can recognize when the S is about the deny the accusation. For example, when he says, "But I ..." or "Gee I never..." or "Can I say one thing?" Most of these attempted denials and the soft inoffensive way they are said bolsters the "I's" assurance that the S is not telling the truth.

(Be careful of the culturally deprived S who keeps nodding and nodding as if to affirm what the X is saying, especially when he asks, "Sir, can I say one thing?" say, "Joe, I want to tell you the whole story first because you are not telling the truth!" Continue to talk but be much more forceful and dramatic, because it is a good indication the S is clearly guilty because when the S is ready to confess he will not ask you if he can say something, he will just confess.

OVERCOMING THE S's OBJECTIONS:

In the course of the interview the S may offer an objection instead

of a denial and this is another good indication that progress is being made to the X's statements. For example, if the S stops his denials and says, very apologetically! "But I don't need the money. I got enough money!"

X: "Listen Joe everyone can use more money. They tell a story about John D. Rockefeller, the richest man in the world. If he saw a dime on the sidewalk he would stoop over, pick it up, and put it in his pocket. He didn't kick it away or leave it on the sidewalk. He didn't need that dime but he picked it up, and Joe, so would you!"

In this same type case the S may say: "If I needed money, I could get what I need from my folks!"

X: "Joe, your folks won't just give their money away. They would want you to pay it back and you would want to pay it back, too. But, Joe, you wouldn't ask your folks for money. They need their money. Now, Joe, I'd like to consider you borrowed the money in this case and you're honest enough to pay it back. When can you pay this money back? Can you pay it back at one time, or a little bit at a time?"

In other cases of identification the S may say, "But she said the man who did it was 5 foot 8 inches, and I am 5 foot 10 inches tall." or "She said the man wore a brown sweater, and I don't have a brown sweater!" The "I" should say, "These are minor things, but the real truth is in your lie-detector test reaction, and it shows you are not telling the truth!"

The S may also use an alibi as a means of objecting, such as; S: "But I can prove I was home at the time that (crime) happened. I can prove it by my wife and my mother. They were with me!"

X: "Joe, you're a good guy. You did wrong, now don't try to get your wife and mother to lie for you because you are getting them to lie and that means they will be committing perjury and that's a serious crime! Why don't you straighten this out yourself. Be a man and don't try to get your wife and mother into trouble with you."

The guilty S usually has some objections or denials at first, but if the X answers them properly, the objections soften and even the attempt to deny lessens. When these things occur, it is a good indication you are coming close to the final stages of the IN.

If the S claims to have an air-tight alibi, i.e., a statement from others verifying the exact time and the exact circumstances embodying the alibi, it is proper for the X to question the veracity of that alibi in the following manner. "Joe, that alibi is too pat! Joe, I can't tell you what I did on that date (several months ago) and I know I didn't do this thing. Joe, tell me where were you and what were you doing at that exact time one week later? Can you tell me right now? Of course you can't and that's why it looks so funny when you tell exactly what you did the night this thing happened, and then to top it off, you get several other people to come up with exactly the same story. Joe, as I said before, it's just too pat and; therefore, not believable at all!"

Do not allow the S to smoke after the IN begins. Put him off (and if

you are a smoker) say, "Let's get this straightened out first and then we can both have a smoke," or (if you are not a smoker) say, "Can you put that cigarette away for awhile, it bothers my sinuses." (It is best to have ash trays, matches and all other evidence of smoking material out of the room before you start to IN.)

Do not move the S from one chair to another or from one room to another after the IN begins because it is psychologically wrong, and it allows the S to release considerable tension in doing so.

Suggest reasons why the crime happened, making sure there is some apparent justification for the S doing the crime. For example: In a shooting case say, "Did you think he was reaching for a gun or a knife or something? Did you think you had to protect yourself? If that's the way it was then it is a self-defense." If the reason you suggest seems to interest the S; i.e., if he seems to pay attention embellish on the reason or the excuse, and repeat it and repeat it. If the S, on the other hand, seems to object to the reason offered and he appears sincere, change to another reason or excuse.

Observe the S's physical reactions, his answers, and especially the look in his eyes. The X should concentrate on looking the S in the eye, but must not challenge him to look you in the eye because if you do he will say, "Yes I can," and then stare at you causing all the preliminary preparation discussed previously to be lost. The guilty S's eyes eventually become evasive and then his head turns away to avoid the X's probing look. The X should cup his forefinger under the S's chin and gently move the S's head back so that he will be required to look the X in the eye. Sometimes it is necessary to place your hand on the S's shoulder and turn his body toward you. If the S tries to avoid looking the X in the eye he has fallen into place, and is ready for a confession. However, he is not ready until he stops talking or trying to use evasive language or tactics.

Quiet and Listens. When the S finally stops trying to deny the crime and stops moving and only listens, or only looks to the side, or is somewhat blank in his expression, he is ready for the special searching question.

Ask the Special Question by Suggesting Alternatives. Avoid anything in the proposition or question that pertains to the actual doing of the crime. For example: In a case involving a murder the S can be asked, "Was the knife on the counter, or in the drawer Joe?" Repeat and repeat and repeat this question, and not to be monotonous, vary it with a supporting statement such as "Joe, you didn't take the knife out of the drawer did you?" or "Joe, was the knife just laying out there on the counter? I'm sure it was on the counter Joe, or was it in the drawer Joe? Now Joe if the knife was in the drawer and you had to open the drawer and take time to find it and then use it that's one thing, and that's bad; but if the knife was just laying out there and in a fit of anger you accidentally grabbed it and used it without thinking, I can easily understand that! Joe, was the knife laying on the counter? I'm almost certain it was, or Joe, was it in the drawer?"

The "I" may interpose the question, "Joe, would I be telling the

truth if I said the knife was just laying there on the counter! Is that the truth Joe?" Answer, "Yes," or the S nods "Yes."

During this persistent inquiry in which the alternative questions are asked keep looking the S in the eye and turn his head to you. Keep your one hand on his shoulder and the other to cup your forefinger under the S's chin and persist asking the questions until he makes an answer however feeble; such as, "On the counter!"

In the case of women and youthful offenders, and in some rare cases men, the surest indication that the S is ready for the special question is when the S is in tears or near tears. The S at this point is in the weakest psychologcial moment of resistance. However, if the S does cry, allow the S to cry only for a short while without interruption, and then ask the searching questions as previously indicated.

CONFESSION:

After the S says, "On the counter" he has actually confessed. Pat the S on the shoulder and then proceed to inquire about the details. It might be well to ask "Were you drinking Joe?" Answer: "A few drinks!" Question: "Was the V drinking Joe?" Answer: "Yeah, the same as me. A few drinks!" This further helps the S to talk and explain the details of the crime. After the S has made a reasonable explanation, and if the X has doubts as to whether the knife was on the counter, he can appeal to the S's honor and say, "Joe, if that knife was in the drawer say so because it's going to come out anyway and so let's get it straight now. You'll feel a lot better when you tell the whole truth." (Depending on how the S looks at this point; i.e., if he listens to the whole statement then say, "Joe the knife was in the drawer! Right?" S's answer: "Yeah!!")

It is most important for the X to have the Alternative Questions in mind before the IN begins. Examples: (1) In a shooting case, "Was he (V) coming toward you or going away from you when this (shooting) happened?" (However, do not mention the word "shooting.") (2) In a robbery case involving a shooting, "Was he just standing there or did he reach for his pocket at the time this (shooting) happened?" (3) In a theft case, "Can you pay this money back right now or a little bit at a time?" (4) In a robbery case, "Did he have $400 in his wallet as he says he did or was it a lot less than that?" (5) "What did you need the money for Joe, was it for your family or was it to use on some broad?" (6) In a case involving two robbers - the taller robber hit the V on the head and the shorter one took his money. IN of the shorter robber ask, "Did you hit him on the head or did Joe (taller robber) hit him on the head?" (Indicate that the one who hit him on the head is the real culprit.) (7) In a forcible rape case, "Did you think she was a prostitute Joe, or were you just trying to make a regular pickup?" (8) "Did she make any signs to indicate she was inviting you or did you just push her into the car?" (9) "Did you think he was a gay or was he a regular guy?" (10) For almost any case an effective alternative could be "Joe, was this your idea or someone else's?" or "Joe, did you hear someone talking about this earlier and you just were too heavily tempted to keep from doing it?"

* * * * * *

PRETEST - RAPE

By

John E. Reid

(Two answers are given to each question, one by an innocent subject and the other by a guilty subject.)

HISTORY: On January 18, 1973, at 5:00 p.m. an 18 year-old victim claimed she was forcibly raped in the city park, and identified the subject who is a 26 year-old truck driver as her assailant. It was proved he made deliveries in that general area, but he denies the accusation and denies ever being in the city park.

PURPOSE:

Question: "Did anyone tell you why you are here to take this test?" (If the subject denies knowing why he is here the examiner should tell him he has been accused of raping the victim.)

Innocent Answer: "Yeah, she says I raped her! How do you like that?" This disgusted and incensed attitude is an indication of innocence. Also the answer clearly and directly states the accusation.

Guilty Answer: However, if the subject says, "Well, she (victim) says I had something to do with her," or is vague about the accusation, he may have reason to be vague because he is guilty.

YOU:

Question: "Now if you did force her to have SI with you this lie-detector is going to find that out, so if you did force her you should tell me right now before the test. Joe, did you force that girl to have SI with you?" (Very direct and challenging.)

Innocent Answer: Subject very direct. "I didn't do it. I never saw her before. I want this test and it will prove I'm telling the truth."

Guilty Answer: If the subject delays his answer for an unreasonable time or is vague in his answer or shifts in his chair, he is apt to be guilty. This subject will finally deny doing it, or instead he may say, "Well let's take the test!" (The subject should also be asked if he knows or knew the victim prior to the accusation.)

SUSPICION:

Question: "Do you have any idea as to who would do a thing like this?"

Innocent Answer: "No I don't! I have never known anyone who could do a thing like that !" (Very direct, good I-I.)

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Polygraph 1982, 11(1)

Guilty Answer: May become uneasy, vague and answers indirectly. If knowledge now asked above, the subject may give alter-ego answer at this time. For example; "They say there is a guy who looks like me but I ---." (Subject's answer fades out ----.)

IDENTIFY:

Question: "Why do you think this girl identified you as the guy who raped her?"

Innocent Answer: "Boy I can't understand it. I have never seen her before in my life. She's either nuts or some guy must look like me."

Guilty Answer: If the subject is vague about the victim identifying him and says, "She first said the guy who did it was six feet tall and I'm only five feet eight inches, and then she says the guy wore a brown shirt and I don't have a brown shirt," or gives other types of objections to the victim's testimony, he is probably guilty. (These answers are more to discredit the accuser and to cloud her identification and are typically common answers of guilty subjects.)

ALIBI:

Question: "Why would a witness say she saw you in the park around that time?"

Innocent Answer: "No reason at all. I can't understand it. She made a mistake, that's all I can say." (Very direct, good I-I.)

Guilty Answer: If the subject says a plain "No" or delays his answer, the examiner should follow-up by saying,

BAIT:

"If you were there earlier or after this happened say so so that I can make allowances for that on the test. Were you there before or after this happened?" Watch the subject's actions, his uneasiness. The subject will eventually say "No," but the subject's indecision or deliberation before he says "No" is one of the most important indications of guilt.

ALCOHOL:

Question: "Lots of time a guy has something to drink and does things he ordinarily would not do. Joe, did you have anything to drink that night?"

Innocent Answer: Very direct says, "Yeah, I had something to drink that night and almost every night, but I didn't have anything to do with that girl. I didn't rape her!"

Guilty Answer: Delays while parrying the questions, may shift in the chair and finally says, "No." (To having anything to drink that night.) (IT IS THE DELAY AND DELIBERATION THAT THE EXAMINER LOOKS FOR AND DOES NOT ACTUALLY LOOK FOR AN ADMISSION AS SUCH.)

THINK:

Question: "Did you ever think of doing a thing like this to anyone, even though you didn't? If you have I want that thought out of your mind before this test starts so that it will not effect your test!"

IMPORTANT:

In order to commit rape or any other crime a suspect must first entertain the thought. While attaching the subject to the Polygraph before the pretest, the examiner can take a psychological advantage of him because he has the threat of the instrument hanging over his head and the guilty subject is at a great disadvantage and often times displays significant behaviorial symptoms. The innocent subject has no such problems and the fact he is attached to the Polygraph instrument does not change his behavioral symptoms at all.

Innocent Answer: Immediately says "No" and is very direct. (It is possible an innocent subject may have a fleeting thought in this regard but dismissed it and does not ever consider it seriously, and consequently denies it.)

Guilty Answer: May say (after shifting in the chair), "Well yeah I thought about it, everybody does, but I -----." (Subject becomes very vague in his answers and does not complete his whole answer.)

T.S.:

Question: "Joe, about 10 percent of the times the lie-detector just doesn't give us an answer. Now if the lie-detector doesn't give us an answer on you in this case and in order to clear it up will you agree to take truth serum?"

Innocent Answer: "Sure I'll take anything."

Guilty Answer: If the subjects refuses or says, "No, the lie-detector is enough," or if he becomes evasive, shifts in his chair and says, "No, I can't take any kind of a needle," (hypodermic), the examiner can say by way of eliminating this objection, "Joe, needles aren't used anymore. A pill is used, just like a pill is used for diabetes. They use to have to use a needle." If the subject again avoids this by saying, "No I can't take any kind of drugs, even pills," it is a good indication that the subject is afraid to take truth serum for fear the truth will expose him as guilty. Guilty subjects also resist taking truth serum by saying they want to consult with their doctors or lawyers before agreeing to taking it. However, a pretest agreement to take truth serum is not really significant because both truthful and deceptive subjects will agree to taking it. The best behavioral indication is when a subject refuses to take it that is usually a guilty behavioral symptom.

IMPORTANT:

Truth serum is a much more productive question to ask when an impasse has been reached during an interrogation after the tests. In such a situation, the examiner should say, "Okay you are saying the Polygraph is

wrong when it shows you are not telling the truth. I'll give you a chance to prove that the Polygraph is wrong. I'll arrange to get a truth serum test for you!" If the subject readily agrees and asks for it even after some inquiry about how it works, this subject may very well be telling the truth. If the subject refuses or dodges; such as he must talk to his folks, he must see his lawyer, or that he can't take needles, or is otherwise evasive, he is probably guilty.

"Has anything like this ever happened before?" If the subject says "Yes" it is an indication that he has a tendency to do this sort of thing.

An innocent subject's answer is usually "No" and he bears it out by indicating an incredulous look seeming to question the propriety of the examiner in asking such a question.

CONTROL QUESTION:

Based on Sex Motive: At this point the examiner should plan for a control question and this can be done by asking, "Joe, did you ever have anything to do sexually with anyone?" and if the subject answers "No" ask, "Did you ever think of having anything to do sexually with anyone?" If the subject answers "No," that question should be used as the control question in this case. If, however, the subject agrees that he did have something to do sexually with someone, the examiner should inquire as to the general details of the act or acts and the number of times it occurred. If the subject says that it happened on one or two occasions then the control question should be, "Besides the two times you told about did you ever have anything to do sexually with anyone else?" If, however, the subject originally stated that he did have something to do sexually with others a number of times it is suggested that the subject be asked a different control question such as, "Did you ever have anything to do sexually with any unacquainted girl or woman?" If the subject denies having anything to do sexually with an unacquainted girl or woman the same progression using "try" and "think" should be used, and if the subject finally denies ever thinking of having anything to do sexually with an unacquainted girl or woman that question should be asked as a control question. If the subject in the first instance admitted having anything to do sexually with several unacquainted girls or women, it is suggested that the subject be asked, "Did you ever force anyone to have anything to do sexually with you?" If the answer is "Yes" (refer to list of control questions in sex cases and select one as the control question. If the answer is "No" as it usually is, the examiner can ask, "Joe did you ever try to force a girl to have sex with you?" If the answer is "No" then ask, "Did you ever think about having sex with an unacquainted girl or woman?" If the answer is "Yes" (then choose the question above for the control question, "Did you ever think of forcing any girl to have sex with you?")

CHECK CONTROL QUESTION SHEET AND ADD CONTROL QUESTIONS:

It will be noted that in choosing the control question, the one that has the greatest possibility of being a lie is the question chosen. Although this procedure seems quite laborious in arriving at the control question another purpose is accomplished in doing so. Considerable information can be obtained from the subject in learning of his thoughts and

desires. Every admission the subject makes can at least be mentally noted so that the subject can be evaluated as the type who might rape the victim or due to his smugness and refusal to admit anyting, his actions and attitude may point toward his guilt. In addition, this discussion with the subject in preparing the control question is conditioning him for a reaction. If he is truthful he will react to the control question, but if he is not he will only respond to the crucial questions under investigation and no amount of conditioning on the control question will stimulate a reaction to the control question.

SPECIAL BAIT QUESTIONS TO BE USED WITH THE SUBJECT WHO KNOWS THE VICTIM

BAIT:

In cases where the subject knew the victim before the complaint ask, "Now Joe if you had sex with her (victim) and she agreed to it and now she may think she's pregnant and is accusing you of forcing her, Joe this is not rape. Tell me, Joe, did she willingly have sex with you?"

Innocent Answer: "So help me I never went out with her before in my life. I don't know why she is accusing me!"

Guilty Answer: If the subject parries the question and seems to be in a quandry he is probably guilty and is just trying to figure it out in his own mind as to whether he should give up and place the blame on the victim and say she willingly had sexual intercourse with him or keep quiet about the whole thing. This subject usually after some deliberation vaguely denies the sexual intercourse. (It is the delay and deliberation that the examiner looks for and does not actually look for an admission of voluntary sexual intercourse.)

DO YOU THINK SHE WAS RAPED?

(Note: In cases where the subject admits knowing the victim the examiner also can ask; "Do you think she was really raped?"

If guilty, he may try to darken her reputation by either saying, "Lots of guys play around with her."

But if he is innocent, he'll probably say, "I suppose so, but she wasn't raped by me."

BAIT:

Question: If you just kissed her that night or something like that and now she is yelling rape, say so because that's not rape."

Innocent Answer: Very direct, says "I never kissed her and I never raped her and I don't know why you would even ask me that!!!"

Guilty Answer: (Watch for a delay in his answer, and if so) say: "If that's what happened tell me because then maybe this test isn't necessary at all!" (If the subject seems to parry the question or seems to be in a quandry as if he is trying to dope it out in his own mind and finally says "No," this is a good indication the subject is probably guilty of the crime.

BAIT:

Question: "If you tried to have SI with her that night but didn't and she got messed up she may have had to tell her folks she was forced, this is not rape Joe! Did you just try to have something to do with her that night Joe?"

BAIT:

Question: "Joe if she led you on and kept teasing you and you finally had sex with her and now she is yelling rape for an excuse to her folks say so, that's not rape Joe. It's her fault for leading you on. Is that the way it was Joe?"

BAIT SPECIAL INQUIRIES:

"If you wanted to have sexual intercourse with her but didn't tell me about it and get it off your mind! That doesn't mean you had it, but with that on your mind, it can certainly effect your test!"

Other additional pretest questions can be asked in this hypothetical rape case, and these questions can be asked in most other types of cases equally as well. For example: "Joe, if and when they find the guy who did this what do you think they should do to him?" A truthful subject's retort is likely to be: "String the SOB up; he certainly got me into a lot of trouble," on the other hand a lying subject when asked this same question may shift around in the chair, become evasive and finally says, "Well it all depends on what made him do it." In other words the lying subject has a tendency to excuse the perpetrator and also be as lenient as possible in suggesting the amount of punishment.

ANOTHER GOOD QUESTION:

"How do you think the guy who raped her feels about this Joe?" (The actual crime should be mentioned in the question to obtain a better response from the subject." A truthful subject's response usually will be something like this: "He must feel pretty lousy. How can anyone live with himself after doing a think like that? Maybe he is nuts or something." A lying subject usually does not have much of an answer, or he may actually describe himself as to his present condition such as, "he's probably scared and worried." In making this answer the lying subject probably will shift around in the chair and be unable to look directly at the examiner.

REVEALING PRETEST INTERVIEW QUESTION:

"How do you feel about taking this test?" The innocent subject usually gives some such answer as: "I'm glad to take the test, and I hope it finds the guilty party." On the other hand, a guilty subject's answer is usually excusatory; he tells of his nervousness or of physical disabilities and indicates quite clearly that he would rather avoid the test or at least delay it for the present.

In this same regard the subject may be asked: "How do you think this test will come out on you?" The truthful subject is confident that the

results will favor him, but the lying subject is evasive and indicates he is unsure of himself and will, on occasion, attack the accuracy of the test without any semblance of proof.

MEDICATIONS

In view of the frequency with which medications of one sort or another are used today, and the possibility that some of them may interfere with the Polygraph examination results, it is well to make an inquiry of the subject along this line: "Joe, did you take any medication within the last 12 hours, any drugs or any kind of narcotics?" A subject who is truthful about the matter under investigation who has taken medication of any kind will say: "Well, I took an aspirin (a cold tablet or the doctor gave me a prescription for my nerves and I took one of them this morning.") This subject usually will produce the bottle and the prescription label and will invite you to call his doctor. Other truthful subjects may say, "I am supposed to take this prescription in the morning, but knowing I was going to take this test I did not do so."

The reason for asking about medication is twofold: (1) to learn if the subject actually did take any medication that would affect his test records, and (2) to learn if the subject is willing to admit taking any medication before the test. The truthful subject is straightforward and will supply details if he has consumed anything; or if he has not taken any medication he will respond with an unequivocal "No." A lying subject who has taken any medication or drugs may appear uneasy and evasive in his talk and actions because he fears the examiner will ask a medication question on the test which will reveal his lie about not taking anything, but he will deny finally taking any even though he has done so.

An examiner must be mindful, of course, that a lying subject who has not consumed any medication or drugs will nevertheless respond directly with a "No" just as will the truthful subjects.

PURPOSE: "Do you know why you are here?":

A deceptive subject's (usually female or younger subjects) favorite ploy seems to be, "If I act as if I know nothing about the issue under investigation they will think of me as innocent." In other words they concentrate on acting "dumb" rather than following the typical role of acting innocent as most deceptive people are prone to do.

An additional benefit is the candor of the subject who may reveal otherwise important concealed information from the examiner. For example: The subject was physically (abused) interrogated; interrogated for an extended period of time, was deprived of an opportunity to sleep or rest, or was mislead as to the (seriousness) nature of the investigation itself.

Primary observation to be gained from a PURPOSE question is the direct or indirectness of the subject not just in what he says but how he says it.

If "YOU" properly asked, "How do you stand on this?" (should be okay to give the deceptive person a chance to try to save face or give a deceptive observation.)

The innocent subject usually will have no doubt as to what you are asking him to respond to.

SUSPICION:

After you have asked in an equally stern businesslike fashion the examiner should ask the subject again: "Do you know who did do this?" The innocent subject will respond immediately usually with a flat "No" and little else. Whereas a small number of deceptive subjects will fall into a trap and indicate they know who did, but will not name who he suspects nor will he describe him properly or tell how he escaped the scene by fleeing. In reality it is the subject's alter-ego.

BAIT:

Suspicion Question: "Joe, you agree you were in the area at that time, did you see anyone running from the park about that time or see anyone lurking around that just seemed to be up to something no-good? Perhaps even you might have had to stop your truck fast by his running away in front of it."

BAIT:

Identity Question: "Joe ever since I've been with you it seems like you remind me of somebody. I'll bet a lot of people tell you that." Note: You aren't asking a question but making a statement in such a way that a guilty subject will grab the "Bait" and comment on the same.

BAIT:

Think Question: For the subject who responds slowly or possibly indicates deception, it would be timely to bait him especially regarding the clothing craze of the females today (short skirts-bralessness).

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THE SELECTION AND PHRASING OF LIE-DETECTOR TEST CONTROL QUESTIONS*

By

George W. Harman and John E. Reid

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An important key to the effective use of control questions in polygraph (lie-detector) examinations is the proper selection and phrasing of such control or comparative-response questions.[1] The main function of control questions in the test structure is to afford the examiner a valid means of comparing the subject's responses to the questions pertaining to the matter under investigation with those induced by a question calling for an answer which is a known lie or one which the examiner may reasonably assume to be untrue. The process of arriving at the question is in itself important, because the control question should be phrased to suit each individual subject, as well as have a balanced relation in the test with the pertinent or "hot" questions.

The introduction of the control question is best accomplished during the pre-test interview with the subject, when the examiner is discussing the questions pertaining to the investigation. In this way, the control question is introduced to the subject as "part of the procedure," and he will have no occasion to attach undue importance to it. Although occasionally a subject may object to the presence of the control question in the test, he will usually be satisfied if the examiner explains somewhat as follows, "I agree with you; this matter has nothing to do directly with the thing we are investigating, but we don't want anything concerning dishonesty or cheating in your past to cause you trouble on this test. We've found that people who don't get these little things off their minds may

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have trouble when we ask the main test questions. This is an important question for getting you through this test without any trouble, so cooperate with me, and we will get you finished here that much sooner." Although the control question usually has no direct bearing on the matter under investigation, there are actually very few subjects who will object to its being included on the test.

In selecting an area of the subject's background from which to draw a tentative control question, the examiner should adhere to the following principles:

1. The question must be one to which the subject will answer "no".

2. Either the examiner should know from the facts in his possession that the subject's "no" answer is a lie, or he should be reasonably certain the answer is untrue.

3. The subject should believe that the question is important to the procedure and the final test results.

4. The question should concern a matter of lesser weight than the pertinent questions.

5. The control question should be limited to the same general area as the offense for which the subject is being tested. Sex controls should be employed only in those tests involving sex matters or offenses. Most other crimes or offenses can be handled by a control pertaining to dishonesty or cheating.

Some examiners are of the opinion that control questions are valuable only for determining whether a subject is generally responsive--a misconception that apparently results from the practice of introducing controls, as surprise questions, to test the reactions of comparatively unresponsive subjects. But control questions serve a much more valuable purpose when they are introduced during the pre-test interview phase of the test procedure. When thus employed the examiner is provided with a standard by which he can more accurately evaluate what occurs or does not occur in the subject's responses to the pertinent questions. It offers a real safeguard against the risks of error in cases where "clear-cut, guilty" responses may show up in the polygraph records of innocent, angry subjects and in those of innocent subjects having true guilt complexes. It is particularly with the responsive subject that the examiner must have a control question, since possibly the subject may be one of the above responsive-innocent types. Without a control question this could not otherwise be determined. This procedure also affords the examiner an opportunity for readily obtaining admissions from the subject before the test regarding lesser crimes or dishonesties; and it enables the examiner to compare the behavior symptoms of the subject respecting the pertinent questions with those regarding the controls at that time.[2]

The more the examiner knows of the subject's background, occupation, work record, criminal record, and area of activity relating to the matter under investigation, the easier it is for him to arrive at effective control questions. Armed with such information the examiner can frequently form a control question to which the subject's answer will be a known lie.

Each occupation offers ways and means for employees to cheat or steal, and it is to the examiner's advantage to familiarize himself beforehand with the theft opportunities peculiar to the subject's job. Knowing, for instance, that a subject had been a bartender for many years, the examiner can be reasonably sure the subject will be lying if he denies ever having cheated a customer or even having kept money he failed to ring-up on the register.

When first approaching the subject on the control question it is wise to keep the inquiry as wide as possible, especially if the examiner is not in possession of any information about which he is certain the subject will lie. The question, "Did you ever steal anything in your life?" is much wider in scope and time than, "In the past six months did you steal more money than what you told about?" The examiner can start the discussion leading to the control question by saying, "Jim, this is basically an honesty matter you are being tested on, so I want you to tell me what you have ever taken during your life that didn't belong to you, either money or merchandise." The subject's reply, of course, determines the subsequent procedure to be followed. He may deny ever having stolen anything. If so, the control is then established as, "Did you ever steal anything in your whole life?" The subject may quibble over not being sure or not remembering. To this the examiner can explain that if the subject honestly does not remember a specific theft, it won't cause him any trouble on the machine. The examiner then states, "I'll ask you this then, 'Do you remember every stealing anything in your life?' You can answer no to that can't you?"

Most subjects will make some control admissions before the test is begun. The examiner should write them down regardless of how petty they may be, thus maintaining the importance of this question in the mind of the subject. A few subjects will say, "Oh, I've stolen a lot of things--do you want me to tell you all of that?" These individuals will admit all they can think of, and rack their brains to think of more. To save time the examiner must cut them off by saying, "That's all you've taken, isn't it?" or "You've never stolen anything else, have you?", thus saving some of the advantage of the control question procedure, for if the subject makes a complete confession of his dishonesties, his fear of the question will diminish to a point where it will not serve its intended purpose. Other subjects may actually have stolen little or nothing during their lives, and if this appears to be the case, the examiner must use a still wider control such as, "Did you ever cheat anyone in any way?"

Whenever control question admissions are made during the pre-test interview, the examiner must qualify the questions to exclude the admissions, and ask a question of the following type:

"Besides what you told about, did you ever steal anything else?"

"Besides when you were a child, did you ever steal any money?"

"Besides the one time did you ever indulge in an unnatural sexual act?"

Once the final content has been established, the phrasing of the control question should be simple, direct, and clearly understood by the subject.

It should be composed as carefully as the pertinent questions, avoiding "loaded," unknown, or embarrassing words or phrases. There should be no doubt in the subject's mind as to the meaning of the question and of the words used, and he must understand that the answer to it is to be "no."

The examiner's appraisal of the subject, based on the pre-test control admissions and the subject's behavior symptoms exhibited during the selection of the control question, will give the examiner some indication of whether or not the subject is withholding information on the control. General evasiveness, physical movements to relieve inner tension, and responses such as, "That's all I can think of" -- "As far as I can remember" -- "Not that I can think of right now" -- will assure the examiner that the control is still valid. Even if the subject is telling the truth as he knows it when he states, "That's all I can remember," there will often remain enough doubt in his mind to cause a response when the question is asked on the test. The admission of one crime or act can generally be considered a good indication that it occurred more than once. It can generally be assumed that an admitted burglar has committed more than one burglary, or that a man who admits an act of sexual perversion is responsible for others.

With some subjects it is very difficult for the examiner to arrive at any control question which he feels confident will produce the desired results. Subjects who will admit to almost anything the examiner introduces, and subjects who claim they cannot answer "no" because of their uncertainty, are among those who will cause this impasse. In these cases the examiner may have to change and rephrase questions five or six times before obtaining a control question agreeable to him and the subject.

After the main control question has been included in the test, it is frequently desirable to insert a secondary control. This may be one which covers a different area of the subject's background, and/or one which is less wide in scope or time. It may also be one which borders more closely the subject matter of the pertinent questions. Such questions may be:

"Besides what you told about, did you ever steal any money from a place where you've worked?"

"Have you stolen anything since you got off probation?"

"In the past six months have you been in a house of prostitution?"

"Besides the 50¢ in postage did you steal anything else from the ABC Company?"

After the selection of the secondary control or after the first tests, it may become evident to the examiner that it is more effective than the main control. If so, there positions in the test should be interchanged. In some cases a lesser pertinent question having to do with some phase of the investigation other than the commission of the crime or offense, may serve as a control question. This usually happens after the testing has begun. For instance, the question listed above concerning postage could be used as a control in a case where there had been a mysterious disappearance of money in the ABC Company.

BEHAVIOR SYMPTOMS OF LIE-DETECTOR SUBJECTS

By

John E. Reid and Richard O. Arther

Every competent lie-detector examiner must have observed instances where a subject's general conduct and unsolicited statements before, during, and after a test seemed to indicate his guilt or innocence regarding the matter under investigation. In order to make an evaluation of such conduct and statements, a five-year study of a large number of subjects in a variety of case situations was undertaken at the laboratory of John E. Reid and Associates. During this time the behavior reactions and statements of these subjects were closely observed and immediately written into the case file. The final evaluation of the study had to be confined, of course, to the subjects whose guilt or innocence had been verified by trustworthy confessions. In its ultimate analysis the study was based upon observations and data regarding 486 verified guilty and 323 verified innocent subjects who were suspected of various criminal offenses.

The behavior symptoms of the guilty and the innocent were found to differ widely in some respects, while in others they were quite similar. Naturally, no specific type of behavior-even though it is highly typical of one or the other group should ever be considered proof of guilt or innocence, because there are or may be some exceptions to each general rule. Nevertheless, an examiner will find it helpful at times to consider the probable significance of a subject's behavior pattern.

Behavior Symptoms of the Guilty

As might be assumed, a guilty subject is usually far from anxious to take a lie-detector test. None of the 486 verified guilty subjects examined during the five-year study period had requested the lie-detector test. In a few instances, however, an effort was made to deceive the examiner into believing that the subject himself was the one who originally suggested the test.

Guilty subjects will frequently attempt to postpone the date for their examination to a later one than that suggested by the investigators. Guilty subjects who are not in custody, as in personnel investigations, also have a characteristic tendency to be late for their test appointment. They also have a tendency to fail to appear at all on the date of their original appointment.

Once in the examining room the guilty person often looks very worried and is highly nervous. This nervousness is manifested in a variety of ways, e.g., acting aggressive, having a bitter attitude, appearing to be in a shocked condition, experiencing mental blocks, being evasive, having an extremely dry mouth, continually sighing or yawning, refusing to look the examiner in the eye, and moving about. Sometimes he is too friendly or too polite.

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Guilty subjects repeatedly feel it necessary to explain before the examination why their responses might mislead the examiner into believing that they are lying. Hence, they complain of being nervous, and if that does not seem to impress the examiner, they further emphasize their "nervous condition" or mention a physical defect which they may or may not actually have. Also, they frequently feel it necessary to assure the examiner that they are very religious, hoping that the examiner will dismiss them as innocent because of their alleged righteousness.

Guilty subjects sometimes claim that the apparatus is causing them physical pain. They do this for at least one of several reasons. First, they hope that the examiner will turn off the instrument, remove the apparatus, apologize for the pain that was caused, and report to the investigators that this subject cannot be examined because of his great pain sensitivity. Second, its provides them with an excuse for not sitting still and thereby preventing the examiner from obtaining a suitable recording. Third, they are hoping that the examiner, when interpreting the record, will wrongly decide that their guilty responses are pain responses and report them innocent.

During this five-year research period, it was found that approximately one out of five guilty subjects purposely attempted to distort his lie detector records so that the examiner could not tell if he were innocent or guilty. Wiggling the toes, applying muscular pressure, moving the arms, coughing, sniffing, yawning, changing the breathing rate, and talking are some of the methods that are used by guilty subjects for this purpose.

Since the entire lie-detector situation is unpleasant to most guilty subjects, they usually want to leave the examining room as soon as possible. Therefore, they inquire after the first test as to how they came out, ask if the examination is not over yet, complain that the examination is taking much too long, seek a speedy release by alleging that they have another appointment, or refuse to continue with the examination. When leaving they often quickly shake the examiner's hand and hurry out of the laboratory.

Behavior Symptoms of the Innocent

Because everyone given a lie-detector examination is suspected of some wrongdoing, innocent subjects are usually very glad to be given an opportunity to prove their innocence. Often they have requested it so that no suspicion will be directed towards them. This belief that the innocent have in the accuracy of the lie-detector, and that they will be exonerated, is usually shown by their attitude. This attitude is one of genuine confidence in both the machine and the examiner. Because of this confidence they regard the examination as an experience they will want to relate to their family and friends.

Innocent subjects may refer to their nervousness, but after the assurance of the examiner that nervousness makes no difference, they are usually convinced and make no further reference to it. Innocent subjects are often at ease, light-hearted, and talkative. However, they are very sincere and their straight-forwardness is displayed when they discuss the case during the interview.

Their attitude is later manifested by their giving complete cooperation during the test. Of the 323 verified innocent subjects, not one of them purposefully attempted to distort his lie-detector records. However, while being cooperative and sincere, innocent subjects are not overly polite or solicitous.

Behavior Symptoms Common to Both Guilty and Innocent

Some behavior symptoms are exhibited almost equally by both innocent and guilty subjects. Anger is one of these symptoms. However, when the value of the test is properly explained at the beginning of the interview and then demonstrated by a card test, the innocent person usually becomes much more relaxed and jovial. However, the guilty subject often becomes more abusive and argumentative, sometimes to such an extent that he refused to continue any further with any tests.

Impertinence is similarly shown by both types of subjects, but it is usually confined to the "teen-age" group. They display this symptom because of resentment against authority and as an effort at bravado. Consequently, little significance can be placed upon this as to guilt or innocence. However, the guilty woman acts impertinent as one of her womanly wiles, which is a defensive mechanism created by the situation and the presence of a male examiner. This trait is occasionally displayed by the innocent woman who is resentful toward the examiner because of his non-belief in her oral plea of innocence. The guilty man is impertinent because he knows he is caught and feels he must show defiance and lack of fear.

Quietness, another behavior symptom common to both, can be generally categorized as to whether it is quietness of the guilty or that of the innocent. The guilty-quiet try to blend in with the surroundings and become as inoffensive as possible. Often they are afraid to speak for fear of trapping themselves. The innocent-quiet are seemingly only quiet because they are either afraid or awed by the situation and are waiting for the interview to begin. When they are relieved, they usually become more responsive and begin to talk quite freely. However, the guilty-quiet subject rarely, if ever, changes from his non-talkative state.

Frequently both types of subjects display interest in the lie-detector. They inquire as to the types of recordings, whether they will receive an electric shock, what the various attachments are for, and whether the examiner can tell them if their blood pressure is high. Also, both occasionally ask if the lie-detector really works. When told it does, the innocent are usually satisfied, while the guilty often make a caustic comment, such as, "But the Courts don't think so."

Both the guilty and the innocent alike often make some half humorous comment when entering the examining room, e.g., "Boy, the electric chair," or, "Now I'll know how the hot seat feels."[11]

Conclusion

A definite advantage can be gained from observing and classifying a subject's behavior symptoms. As was mentioned previously, the advantage is not in determining whether he is guilty or innocent, since practically all behavior symptoms are subject to general rule exceptions. The real

value comes from the assistance the behavior symptoms give towards the entire lie-detector situation. Thus, the examiner will know whether the card test should be given at the beginning of the interview or at its regular time, what the subject should be told about the lie-detector and its workings, how the interview should be conducted and, generally, how this subject should be handled. When the subject, regardless of guilt or innocence, is of a certain behavior pattern, he is treated in a certain, specific manner.

If he is a highly nervous person, he must be quieted. If he is angry, he must be appeased. If he is quiet, he must be reassured. When these and similar procedures are followed with the guilty, he will receive no emotional relief when the lie-detector test is made. However, if he is innocent, he will usually be sufficiently relieved by these procedures. In both cases, more easily interpreted lie-detector records will result.

The lie-detector examiner should be able to recognize each subject's various behavior symptoms and then be able to determine the suitable procedure to be followed. If this is properly done, the writers are confident that fewer errors will result and that the substantial reduction in indefinite reports will follow.

* * * * * *

THE RELIABILITY OF POLYGRAPH EXAMINER DIAGNOSIS OF TRUTH AND DECEPTION

By

Frank S. Horvath and John E. Reid

Frank S. Horvath is a graduate of Michigan State University with a B.S. Degree in Police Administration. In 1964 following his graduation he pursued the Study of Scientific Polygraph testing at John E. Reid and Associates and became Chief Examiner in 1970. He is licensed as a polygraph examiner in the State of Illinois and is a Charter Member of the American Polygraph Association.

John E. Reid, LLB, DePaul University, Director of John E. Reid and Associates, has made a number of noteworthy contributions to the polygraph field. He is co-author with Professor Fred E. Inbau of Northwestern University Law School of Truth & Deception, The Polygraph (Lie-Detector) Technique and Criminal Interrogation and Confessions 2nd Edition. This is his fourth article to appear in the journal. His previous ones were "Simulated Blood Pressure Responses in Lie Detector Tests and a Method for Their Detection," "A Revised Questioning Technique in Lie-Detector Tests" and "Behavior Symptoms of Lie Detector Subjects."

This study was conducted to determine if Polygraph examiners, working independently of each other, are able to successfully diagnose deception solely from an analysis of Polygraph records. Previous studies dealing with this problem have indicated that Polygraph examiners can reliably determine truth or deception from the records alone, but none of them were conducted in real-life testing situations. Davidson (1968) for example, found that by motivating students involved in an experimental crime he could correctly identify all of the innocent and 92% of the guilty subjects with the use of the Polygraph.[1] Lykken (1959) in a prior experiment, also using students as subjects, reached substantially the same conclusion; he identified all of the innocent and 93.9% of the guilty subjects.[2] Neither of these studies, however, was conducted by or with practicing Polygraph examiners, nor did they rely upon an analysis of Polygraph records obtained in actual investigations. Consequently, the studies have little value in assessing the reliability of Polygraph examiner diagnosis in real-life situations.

Kubis (1962) carried out an elaborate research program for the Air Force Systems Command of the United States Air Force. Although he used a simulated test situation for the experiments, his examiners were trained personnel. He reported that they were able to obtain significant accuracy in identifying the thief, the lookout, and the innocent suspect. He concluded that there was sufficient validity in these experiments to warrant confidence in the lie-detecting procedure as an aid to interrogation processes.[3]

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Ordinarily, in actual Polygraph testing, the examiner uses a complete diagnostic technique to determine deception. He takes into account detailed background information regarding the subject and the investigation; he has the benefit of actually conversing with the subject and observing the subject's attitude and behavior symptoms. In addition, he prepares and reviews the general comprehension of the questions. Since all of these auxiliary sources of information may be factors in arriving at a truth-deception diagnosis, the present study eliminated them and concentrated on Polygraph record analysis only.

In this study ten Polygraph examiners on the staff of John E. Reid and Associates agreed to analyze a number of Polygraph records independently and without the benefit of any information beyond the Polygraph records themselves. Seven of the examiners had been engaged in Polygraph testing more than one year; the remaining three were relatively inexperienced; they had been engaged in Polygraph testing from four to six months and were still participating in an internship training program.

The Polygraph records submitted to the examiners for analysis were obtained from twenty-five case investigations originally conducted by one of the authors (Horvath). The cases were typical of the types usually presented to private Polygraph examiners: theft, sexual misconduct, sabotage, bribery and criminal damage to property. Subsequent to the Polygraph examination each of the selected cases had been solved by a fully corroborated confession of the guilty subject. In these twenty-five cases, seventy-five subjects had been tested originally, but the Polygraph records of only forty of them were selected for the use in this study for the following reason: the polygraph records which were dramatically indicative of truth or deception were eliminated from those submitted to the examiners because they did not require any exceptional skill to interpret. In other words, the evidence of truth and deception would be very obvious to any trained Polygraph examiner.

Twenty of the forty sets of Polygraph records chosen by the writer for this study were verified as those obtained from guilty subjects, and twenty test records were obtained from verified innocent subjects. The records contained one hundred and sixty-four (164) relevant questions which were submitted to the examiners; eighty-one (81) of these questions were verified as having been answered untruthfully during the examinations; eighty-three (83) of the questions were proven to be answered truthfully.

The recording instrument used in conducting the original Polygraph examinations was a five-channel Reid Polygraph which recorded thoracic respiration, abdominal respiration, blood pressure-pulse rate, muscular movements and pressures, and galvanic skin response (GSR). No attempt was made to determine which recording channel or channels the examiners relied upon in arriving at their decisions of truth and deception.

The subjects in each case had been given Polygraph examinations according to standard Reid Control Question Technique.[4] Essentially this technique consists of a pre-test interview and Polygraph testing. During the interview the examiner explains to the subject the purpose of the test and the nature of the instrument. It is at this time that the examiner seeks to condition the subject for the test and to formulate and review

with him the actual test questions. In the pre-test interview the examiner objectively notes the subject's behavior symptoms such as how he acts, looks, and talks and attempts to make an evaluation of these observations in terms of truth or deception. No attempt is made at this time to interrogate the subject with a view to obtaining a confession. At the conclusion of the interview, which lasts about twenty minutes, the examiner proceeds with the Polygraph testing.

The Polygraph testing consists of the asking of relevant, irrelevant and control questions during a number of separate tests. The questions in the 3, 5, 8, 9 and 10 positions are relevant and relate to the matter under investigation, such as, in a murder case, "Did you kill John Jones?" and "Did you shoot John Jones with a .38 caliber revolver?" The questions in the 1, 2, 4 and 7 positions are irrelevant to the issue being investigated; they deal with such matters as, "Do they call you Joe?", "Are you over 21 years of age?", etc. These irrelevant questions are asked for the purpose of establishing the subject's normal pattern of responsiveness. The remaining two questions are control questions. They are placed in the 6 and 11 positions. A control question is one which is unrelated to the matter under investigation, but is of a similar, though less serious nature and one to which the subject will, in all probability, lie; or at least his answer will give him some concern with respect to either its truthfulness or its accuracy. For instance, in a burglary investigation the control question might be, "Did you ever steal anything?" or "Except for what you have already told me, did you ever steal anything else?" The response or lack of response to the control question (in respiration, blood pressure-pulse rate, or GSR) is then compared with what appears in the tracings when the subject is asked the questions relevant to the issue under investigation. If the subject responds to a greater degree and with more consistency during the test series to the control questions than to the relevant questions, he is considered to be telling the truth regarding those relevant questions. On the other hand, if the subject responds more to the relevant questions than to the control questions, it is suggestive of lying regarding the relevant questions.[5]

In about 25 percent of Polygraph cases truth or deception may be so clearly disclosed by the nature of the responses to relevant or control questions that the examiner will be able to point them out to any non-expert and satisfy him of their significance. All records of this category were eliminated from use in this study because they do not constitute a serious test of an examiner's expertise in chart interpretation. In roughly 10 percent of the Polygraph cases the records will be uninterpretable by even the most skilled examiner. In about 65 percent of the cases, however, the responses or lack of responses, to the control questions and relevant questions are sufficiently subtle in appearance and significance so that only a highly skilled and well-trained examiner will be able to interpret them for truth and deception. All of the Polygraph records given to the examiners in this study could be classified as belonging to this category.

The examiners were unfamiliar with either the cases or the Polygraph records which they were called upon to analyze. They were not allowed to discuss the project amongst themselves until all had completed it. They were not given any of the actual test questions used in the original investigations, but because of their familiarity with the technique, each

examiner knew the placement of the irrelevant, relevant, and control questions by their respective numbers as recorded on the records.

The examiners were told on an individual basis that they would be allowed one full working day to analyze the forty sets of Polygraph records. They were instructed to detect the guilty subject, if any, in each investigation and also to "clear" each innocent subject. In addition to this, they were instructed to diagnose truth or deception on each relevant question asked of all forty subjects. They were admonished not to report any subject as totally inconclusive, but if they found in analyzing any particular question reaction that they could not decide truth or deception, they were allowed to report that particular question as doubtful or inconclusive. The reason for this conclusion was that in any given Polygraph examination some of the relevant questions may carry more "emotional weight" than others, even though they all relate to the same investigation. This is especially true in the instance where a guilty person is tested. Often he will respond to a greater degree to a question regarding whether or not he himself committed the offense than he will to a question about whether or not he knows who committed the offense, even though he is lying to both questions asked. The more direct and more emotionally weighted question such as, "Did you shoot John Jones?" sometimes may "mask out" or otherwise "dampen" the response on the indirect or less emotionally weighted questions, such as, "Do you know who did shoot John Jones?"

Prior to being given the Polygraph records, the examiners were told that all subjects were verified as guilty or innocent, but they were not told the number of subjects in each category. More significantly, they were not told whether the Polygraph records of the actual perpetrator were included in each of the cases submitted to them for diagnosis. The examiners were given only basic factual information from each of the twenty-five cases, together with the selected Polygraph records.

The following information, chosen from one of the cases used in this study, is illustrative of the amount and the type of information presented to the project examiners:

"An electric motor was sabotaged at a large midwestern rubber company. It was suspected that one of the company's employees had inserted some knife blades (which were used at the company) into the armature of the motor when it was not running. When it was turned on, the blades caused the motor to "blow up" and produced extensive damage to the surrounding area and almost seriously injured several employees."

The examiners were not told that fourteen employees were given Polygraph examinations before the guilty person was detected in the original investigation. They were supplied with only the brief factual information given above and with the Polygraph records of six of the original fourteen subjects. The six sets of records they were given were those selected from the fourteen as best fitting into the category which requires special skill to interpret. The remaining eight sets of Polygraph records were not given to the examiners. The Polygraph records of the actual perpetrator of this sabotage were not included in the six sets of records given to the examiners for analysis; this fact, however, was withheld from the examiners.

Results

Overall Innocent-Guilty Case Judgments. The ten examiners achieved an average 87.75 percent accuracy in solving the cases, i.e., in correctly detecting the guilty subjects and correctly identifying the innocent subjects. As can be seen from Table 1, however, there was a significant difference between the experienced and the inexperienced examiners. The experienced examiners were successful in 91.4 percent of their diagnoses; the inexperienced in only 79.1 percent.

TABLE 1

DISTRIBUTION OF INNOCENT-GUILTY JUDGMENTS FROM EVALUATING POLYGRAPH RECORDS BY EXAMINERS

	Actually Innocent (20)		Actually Guilty (20)		Percent Correct Judgments
	"Innocent"	"Guilty"	"Innocent"	"Guilty"	
Experienced examiners					
1	19	1	0	20	97.5%
2	18	2	0	20	95.0%
3	19	1	2	18	92.5%
4	19	1	2	18	92.5%
5	18	2	2	18	90.0%
6	20	0	5	15	87.5%
7	18	2	4	16	85.0%
Sub-total	131	9	15	125	91.4%
Inexperienced examiners*					
8	19	1	3	17	90.0%
9	16	4	8	12	70.0%
10	15	5	4	16	77.5%
Sub-total	50	10	15	45	79.19%
Total	181	19	30	170	87.75%

* Less than six months experience.

It should also be noted that the more experienced examiners were quite consistent with each other. Their accuracy scores ranged from a low of 85 percent to a high of 97.5 percent, with five of the seven in this group achieving a 90 percent accuracy or higher. Only one of the three inexperienced examiners achieved the 90 percent accuracy level. The remaining two achieved only a 70 percent and a 77.5 percent score, respectively.

The results also seem to support the belief of most Polygraph examiners that their errors generally favor the guilty subject, i.e., that an examiner is more inclined to report a guilty subject innocent than he is to report an innocent subject guilty.

There was a total of 400 innocent-guilty judgements to be made by the examiners; that is, each of the ten examiners was called upon to judge each of the forty subjects either guilty or innocent. One-half of the judgements were to be made on verified innocent subjects and one-half were to be made on verified guilty subjects; therefore, there were 200 judgements in each category.

Over the 200 judgements of the twenty verified innocent subjects, nineteen (9.5) were erroneously judged "guilty" by the examiners; of the 200 judgements of the twenty verified guilty subjects, thirty (15 percent) were erroneously judged innocent. In analyzing this further, it should be noted that for the seven experienced examiners only nine out of 140 (6.4 percent) judgements on the twenty innocent subjects were errors, while among inexperienced examiners, 16.6 percent of their judgements on verified innocent subjects were errors. For verified guilty subjects, 10.8 percent of the experienced examiner judgements were "innocent" errors, while 25.0 percent of the inexperienced examiner judgements were "innocent" errors.

Individual Relevant Question by Question Analysis

Table 2 summarizes the data for each examiner's performance in correctly interpreting the 164 relevant questions for truth and deception.

Nine of the ten examiners achieved at least a 77.5 percent accuracy rating on the question by question analysis and six of the ten achieved better than 83 percent. Although the experienced examiners again significantly higher than the inexperienced, both groups combined had only an overall error of 20.7 percent. This figure, however, is somewhat misleading, because it includes as errors those relevant questions which the examiners reported as inconclusive or on which they were unable to make any diagnosis. This error was usually made by examiners when they analyzed the Polygraph records of a guilty subject and correctly interpreted the more direct relevant questions, but were unable to interpret an indirect relevant question due to the "masking out" effect described above. If these inconclusive questions errors are eliminated, examiners actually made only an 11 percent error; that is, they judged only 11 percent of the relevant questions opposite their verification, thus achieving an overall 89 percent accuracy rating.

To further illustrate the results of the question analysis, Table 3 indicates how accurately each examiner interpreted the Polygraph records of one of the six subjects in the previously described sabotage case.

The relevant questions asked of all subjects in this case were as follows: Question # 3, "Did you inset two mill knife blades into the armature of that motor?"; Question # 8, "Did you cause that damage to the mill motor?"; Question # 9, "Do you know who put those knife blades in the mill motor?" There was no question asked in #10 position. The irrelevant and control questions were placed according to the format previously explained.

The subject (used as an example in the table) was asked the four relevant qeustions. Since it had been verified that his answers were truthful to all questions, his records should have been analyzed by the examiners as being those of an "innocent" subject and as consisting of four truthful relevant question responses. Only examiners 1, 2, 3, 4, 6, and 9 judged the subject in this manner. Examiners 7, 8 and 10 judged this subject as "guilty" and the four relevant question reactions as "lies." Examiner 5 judged this subject as innocent by finding him telling the truth to Questions # 3, # 5 and # 8, but recorded him as inconclusive on Question # 9. (knowledge question) This was recorded as an error.

TABLE 2

DISTRIBUTION OF TRUE-LIE JUDGMENTS OF EXAMINEE RESPONSES TO 164 QUESTIONS BY EXAMINERS

Examiner Judgment	Actually True Response (83 true responses)			Actually Lie Response (81 lie responses)			Percent Correct Judgments
	"True"	"?"	"Lie"	"True"	"?"	"Lie"	
Experienced examiners							
1	79	0	4	0	1	80	96.6%
2	74	0	9	3	0	78	92.7%
3	77	0	6	14	0	67	87.6%
4	75	3	5	8	7	66	86.0%
5	64	18	1	7	11	63	77.5%
6	60	0	23	0	0	81	86.0%
7	65	11	7	14	5	62	77.5%
Sub-total	494	32	55	46	24	497	86.2%
Inexperienced examiners*							
8	71	4	8	12	13	56	77.5%
9	60	15	8	24	11	46	64.6%
10	61	13	9	19	2	60	83.8%
Sub-total	192	32	25	55	26	162	75.0%
Total	686	64	80	101	50	659	79.3%

* Examiners with less than six months experience.

TABLE 3

EXAMINER JUDGMENTS OF THE RESPONSES OF ONE INNOCENT AND TRUTHFUL SUBJECT TO FOUR RELEVANT QUESTIONS

	Relevant Question Number				Overall Judgment
	#3	#5	#8	#9	
Experienced examiners					
1	Truthful	Truthful	Truthful	Truthful	Innocent
2	Truthful	Truthful	Truthful	Truthful	Innocent
3	Truthful	Truthful	Truthful	Truthful	Innocent
4	Truthful	Truthful	Truthful	Truthful	Innocent
5	Truthful	Truthful	Truthful	Inconclusive	Innocent, but guilty knowledge
6	Truthful	Truthful	Truthful	Truthful	Innocent
7	Not truthful	Not truthful	Not truthful	Not truthful	Guilty
Inexperienced examiners*					
8	Not truthful	Not truthful	Not truthful	Not truthful	Guilty
9	Truthful	Truthful	Truthful	Truthful	Innocent
10	Not truthful	Not truthful	Not truthful	Not truthful	Guilty

* Examiners with less than six months experience.

inexperienced, both groups combined had only an overall error of 20.7 percent. This figure, however, is somewhat misleading, because it includes as errors those relevant questions which the examiners reported as inconclusive or on which they were unable to make any diagnosis. This error was usually made by examiners when they analyzed the Polygraph records of a guilty subject and cor-

Discussion

These data clearly support the claim of Polygraph examiners that they can reliably diagnose truth and deception or detect the guilty and identify the innocent solely from an analysis of Polygraph records. In actual practice, of course, a Polygraph examiner has the benefit of all the detailed factual information in the case beforehand, as well as the behavior symptoms of the subject at the time of the test and moreover in many case situations he has the full complement of Polygraph records of all the subjects in the case before he issues an opinion as to whether the subject is truthful or not. In actual testing situations the examiner places the utmost reliance upon resonses or lack of responses on Polygraph records, but he is afforded the additional opportunity to evaluate the attitude of the subject and to make allowances for a resentful or angry attitude, a condition which could cause an error in interpretation of Polygraph records. An opportunity to observe the subject and evaluate his attitude toward the test would allow an examiner to diagnose truth and deception more reliably than the examiners in this study.

If the examiner had been given all of the Polygraph records in each case and were aware of the fact that one of the subjects must be guilty, the accuracy ratings for both experienced and inexperienced examiners would have been greatly improved. This would have allowed for the examiners to compare the Polygraph records of one subject with those of another subject in the same investigation.

Although the results of the present study attest to the reliability of Polygrpah examiner's ability to diagnose truth and decepiton, they also attest to the value of practical experience in qualifying examiners as experts. The accuracy of the experienced examiners was significantly better than that of the inexperienced examiners. This was probably due to the fact that the experienced examiners had more practical knowledge of the limitations of the Polygraph technique in that both groups of examiners had been taught the "theory" of the technique in the same manner. The examiners with the most experienced were more able to apply consistently the fine points of the theory, which assisted them in diagnosing truth and deception with greater accuracy.

Acknowledgements

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Footnotes

[1] Davidson, P.O. "Validity of the Guilty Knowledge Technique: The Effects of Motivation." 52 J. Appl. Psychol., 62-65 (1968).

[2] Lykken, D.T. "The GSR in the Detection of Guilt." 43 J. Appl. Psychol., 385-388 (1959).

[3] Kubis, J.F. Study in Lie Detection, Computer Feasibility Consideration. Griffin Air Force Base, New York: Rome Air Development Center, Air Force Systems Command, United States Air Force, 1962.

[4] Reid, John E. "A Revised Questioning Technique in Lie-Detector Test." 37 J. Crim. L.C. & P.C. 542 (1947). Truth and Deception: The Polygraph (Lie-Detector) Technique, 27-32 (1966).

[5] The two previous paragraphs are excerpts from "The Lie Detector Technique: A Reliable and Valuable Investigative Aid." Inbau, F.E. and Reid, J.E., 50 A.B.A.V. (5)(1964).

* * * * * *

THE POLYGRAPH SILENT ANSWER TEST

By

Frank S. Horvath and John E. Reid

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Polygraph test results have been based traditionally upon the recorded reactions to test questions that are answered audibly by either a "yes" or a "no." In the past two years a new test, known as the Silent Answer Test (hereafter referred to as SAT), has been the subject of experimentation in over 4000 specific issue cases with considerable success. The SAT is one in which the subject is instructed by the examiner to refrain during the test from giving any audible answers to the questions that are to be asked of him.[1]

In the SAT the subject is told to listen to each test question and to answer only to himself silently. In other words, the subject is instructed that he is to "sub-vocalize" his answers, just as a person might do when he reads to himself; and, moreover, he is to think of the truthful answer and give that truthful answer to himself--silently.

The Test Questions

All of the test questions are prepared basically from the Reid Control Questioning Technique (hereafter referred to as CQT) which includes four irrelevant questions, such as, "Do they call you Joe?", "Did you ever go to school?", etc; four relevant questions which pertain to the matter under investigation; and two control questions. A control question is one which is unrelated to the matter under investigation, but is of a similar, though less serious nature, and one to which the subject will, in all probability, lie, or at least his answer will give him some concern with respect to either its truthfulness or its accuracy. For instance, in a burglary investigation the control question might be, "Did you ever steal anything?", or "Besides what you have told me about, did you ever steal

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anything else?" The response or lack of response to the control question is then compared with what appears in the tracing when the subject is asked questions relevant to the issue under investigation. If the subject responds to a greater degree and with more consistency during the test series to the control questions than to the relevant questions, he is considered to be telling the truth regarding the relevant questions. On the other hand, if the subject responds more to the relevant questions than to the control questions, it is suggestive of lying regarding the relevant questions. A series of such tests, however is conducted before a conclusion is reached as to lying or truthtelling.[2]

Conception of the SAT

The SAT was conceived as the result of the "yes test" - one of the entire series that may be described as an "affirmation test."[3] In the "yes test" the subject is instruction to answer "yes" to all of the questions, including the pertinent relevant questions to which he had previously answered "no" on the prior tests. It was discovered that a large number of lying subjects responded to the same degree when they answered "yes" to the relevant questions as on the previous tests when they answered "no" to these same questions. In other words, when the "yes" and "no" answered to the same questions in the two different tests were compared, the same type of emotional response appeared. The reason for this may be due to the fact that some untruthful or lying subjects view their "yes" answers as incriminating, and, therefore, it is disturbing to them even though they are telling the truth. However, a small percentage of the lying subjects show no reactions at all when answering "yes" to the pertinent questions.

The absence of lie responses on the "yes test" is more typical of the subject who is telling the truth about the matter under investigation because he generally realizes he has nothing to fear by complying with the examiner's request to say "yes" to the relevant questions. He knows that he has been telling the truth and assumes that the "yes test" is just part of a routine procedure for detecting the basic liar. (Hereafter we shall apply the term "basic liar" to the person who is lying about the matter under investigation, e.g., the murder, burglary, etc.; and the term "basic truthteller" will be applied to the person who is telling the truth about the matter under investigation.)

Theoretically, a subject who is lying about the matter under investigation, the basic liar, should not respond as a liar when he answers "yes" to the relevant questions on the "yes test"; for after all, if a Polygraph is a "lie-detector" the tracing should indicate he is telling the truth when he answers "yes" to such questions. However, even though the Polygraph is reputed to be a "lie-detector," it is not such a device, and the typical failure of the basic truthteller to give a "lie" response on the "yes test" is itself evidence of that fact. The same inference may be drawn from the basic liar's "lie" reaction even when he answers "yes" to the relevant questions. This phenomenon is what prompted the exploration into the use of the SAT. It was also thought that the SAT might minimize the occurrence of such interfering factors as a cough, a sigh, or a clearing of the throat before, during, or after an audible answer. It was theorized that during a SAT the subject does not have to anticipate audible answers to any test questions, and that this might obviate some of his

anxiety and thereby render the recordings more meaningful. It was also contemplated that an overly apprehensive subject would have more freedom of thought on the test questions if he was not required to answer and, as a result, could focus attention on only those questions which are of most concern to him. Further, it seemed that the SAT might assist in the elimination of the "carryover" type of response that occasionally occurs from one question to another. The "carryover" response is common among highly apprehensive subjects who apparently dwell too deeply on their oral answers and cause the response from the prior questions to continue into the following questions.

Why the SAT Produces Helpful Reactions

In our society it is courteous to answer politely asked questions, and it is an emotional hindrance not to be allowed to answer such questions. It is presumed, therefore, that the subject would be at a distinct disadvantage if told not to answer a question, especially during a Polygraph test. The basic liar may thereby become very suspicious when told not to answer any of the questions; in consequence, he may think much more about the questions to which he will be lying. It is theorized that the SAT causes the subject to have a fear of the unknown, i.e., he is left alone with his thoughts, so to speak, and by attempting to secretly cover the real truth, a mental conflict occurs which produces an emotional reaction that is reflected on the Polygraph chart.

It further appears that some subjects, when answering questions aloud are actually defending themselves against the examiner, and by talking they are allowed to relieve themselves of some of the tension that may be created by the questions stimulus. During the SAT, however, these subjects are no longer defending themselves against the examiner; they are no longer competing with him; instead, they must now lie to themselves. During such silent lying to themselves they seem to try harder to conceal their deception, which efforts, in turn, accentuate their Polygraph responses.

It is very difficult for a basic liar to ignore his fear of detection; this creates a mental conflict which in turn causes a physiological reaction to appear in the chart tracings. Even though he does not answer, he will have a greater mental conflict with respect to the relevant test questions, whereas the basic truthteller will concern himself only with the control questions.

Instructions to the Subject

Upon initiating the use of the SAT it was discovered that, as in other Polygraph tests, the presentation of the test instructions had much to do with the final results. Two significant points were found to be necessary in order to achieve the maximum benefits from the test: first, the subject must clearly understand that in the SAT he will be asked the same questions as on his previous tests and in exactly the same order they were asked before; secondly, it is very important for him to understand that although he is not to answer orally any test questions, he must answer all test questions silently in his own mind with only truthful answers. After some trial and error the following instructions were decided upon as being the most beneficial:

"Joe, I'm going to conduct another test. However, this test will be a little different from the prior tests. I'm going to ask the same questions as before in exactly the same order, but instead of answering my questions aloud, I want you to listen carefully and then answer each question to yourself with the truthful or correct answer but do so silently. In other words, Joe, don't answer any of the test questions out loud."

"Do you understand what I want you to do when I ask you these questions (indicating the questions on the prepared sheet)?"

When the subject acknowledges that he has understood the test instructions, the examiner proceeds with the test.

Testing Disadvantages Correctable by SAT

Before presenting a detailed, illustrated discussion of the special advantages of SAT, attention shall be given to some of the testing disadvantages inherent in the audible answer test procedure (many of which are illustrated in Figure 1):

1. In preparing for an audible answer to a test question a subject may indulge in:

a) a suppression in respiration (Fig. 1-A); or

b) an excessive intake of air which results in a subsequent compensatory suppression resembling a true deception response (Fig. 1-B).

2. An answer given at the height of an inhalation cycle may produce a substantial distortion in the respiratory pattern (Fig. 1-C).

3. Many obese subjects, because of the pressure of the blood pressure cuff and pneumograph tube, will be impelled to invoke various normally unnecessary muscular movements in order to audibly answer test questions (Fig. 1-D).

4. The SAT helps to correct the respiratory pattern by eliminating objectionable movements caused by the following:

a) a subject who tries to physically prepare himself with sufficient air in his lungs before answering questions aloud; (Fig. 1-E), or

b. a subject who loudly bellows his answer to emphasize his denial; or

c) a subject who feels compelled to talk in addition to answering with a "yes" or "no"; or

d) a subject whose throat becomes irritated each time he is required to orally answer a test question (Fig. 2).

5. The deliberate efforts of a basic liar to "beat the machine" by respiratory distortions are more difficult to detect because of the possible similarity to unintentional distortions due to the breathing effort required for an audible answer (Fig. 3).

Figure 1

A is a portion of a "yes"-"no" Polygraph chart containing the respiration tracing of a verified truthtelling subject. Question 4, answered "yes" (as indicated by the + sign) was an irrelevant question; question 5, answered "no" (as indicated by the - sign), was a relevant question. Observe the suppression midway between 4 and 5; it is an "anticipatory" response and not an indication of lying. It was caused, presumably, by the subject's getting ready for the vocal answer of "no" to the forthcoming relevant question.

B is a portion of a respiration tracing in which the subject takes a deep breath at the time a question is asked, indicated by arrow, and a compensatory suppression thereafter. The deep breath destroys the value of the following suppression in respiration and cannot be considered as a true deception response.

C is an experimental test tracing illustrating what happens when a subject's answer comes at the peak of an inhalation cycle.

D is an experimental polygraph chart illustrating the type of movements that occur when an obese subject answers the test questions. Note, at the arrows, the deep breath taken by the subject and the consequent movement in the blood pressure-pulse recording (the lower tracing).

E is an experimental polygraph chart illustrating a deep respiratory sigh each time the subject answers (see arrows). If the same respiratory sighs are indicated when the subject is not required to answer the test question, it is evidence that the subject is purposely doing so to avoid detection.

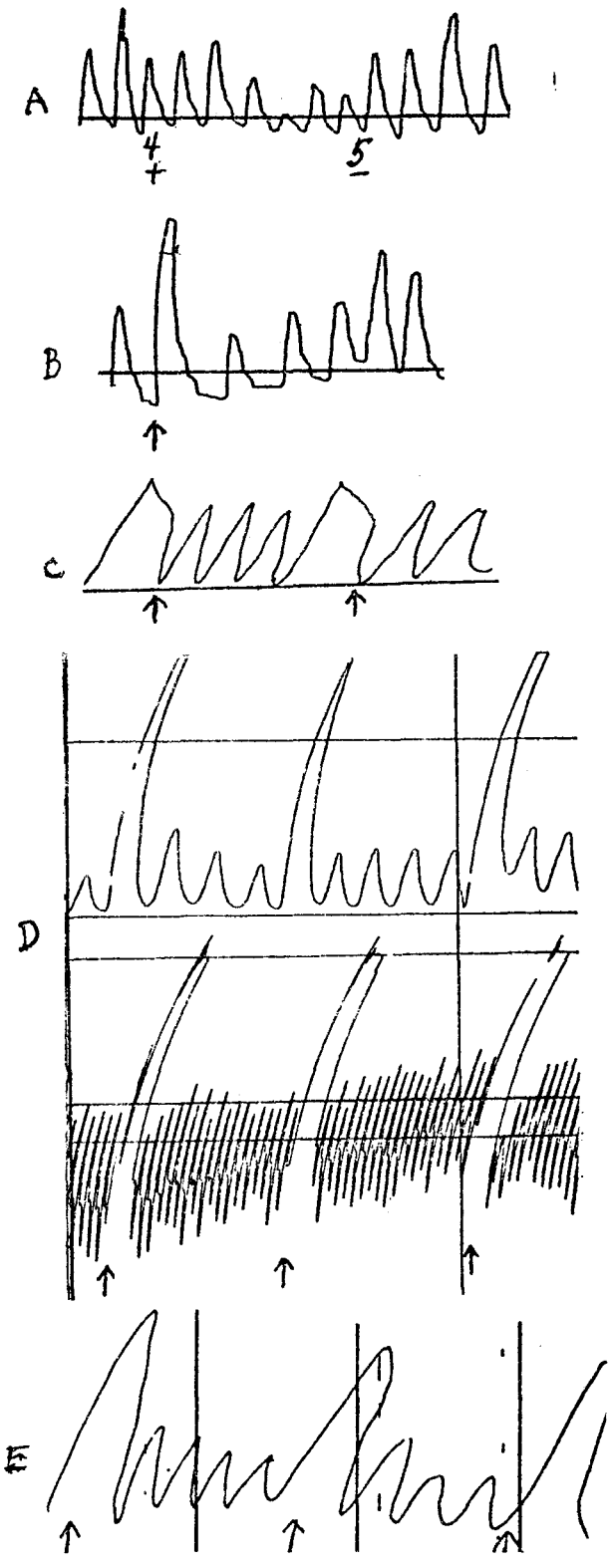
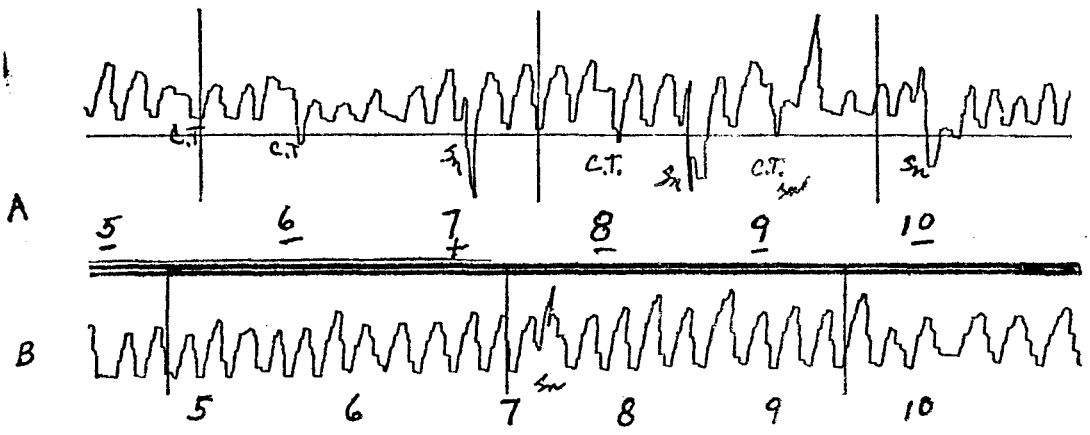


Figure 2



Respiration tracings of a truthful subject in the investigation of the mysterious disappearance of $5,500.00 from an armored car company. Questions 5, 8, and 9 pertain to the loss; questions 7 is irrelevant; and questions 6 and 10 are control questions. The plus or minus signs under the number indicate a "yes" or "no" answer.

On test A notice the erratic respiration pattern caused by the subject's frequent clearing of his throat (indicated as C.T.) and sniffing (indiated by Sn). On test B the subject was instructed not to verbally answer any of the test questions. Notice the lack of throat clearing or sniffing on this test.

Even though the subject cleared his throat and sniffed, he did respond on control questions 6 and 10 in test A (when he answered), and also responded slightly on question 6 (staircase suppression) and significantly (suppression) on question 10 when the subject did not answer the questions aloud on test B.

Even though a significant response appears on A at control questions 6 and 10, the respiration pattern is so confusing as to render unsure what appears thereon. The indications are much clearer on SAT B--and particularly at control question 10.

Figure 3

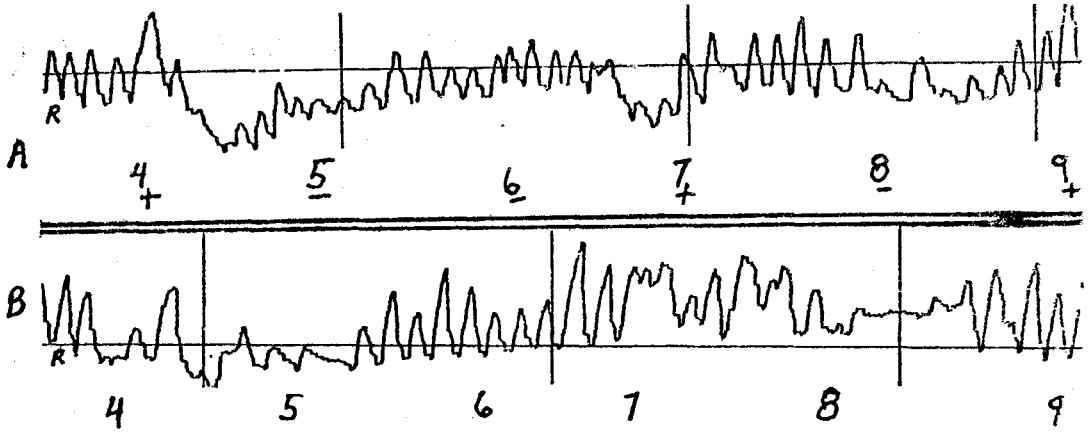


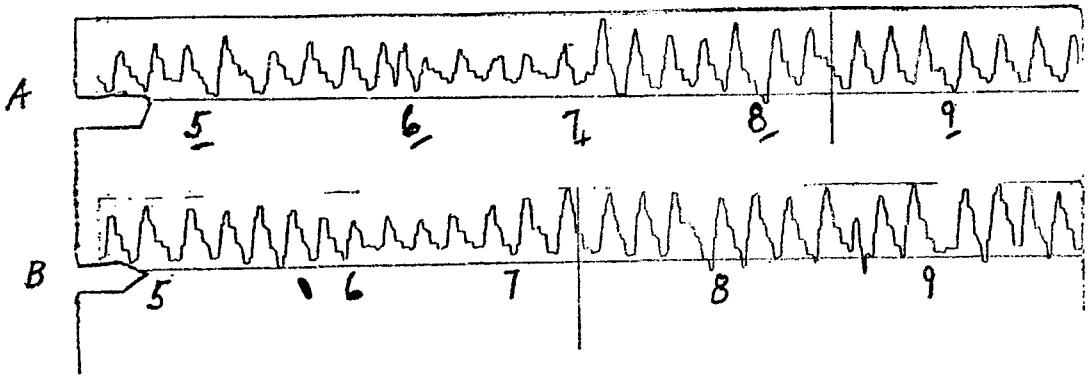
Figure 3: Respiration tracings of an untruthful subject regarding the illegal disclosure of confidential information. On "yes"-"no" test A, observe the respiration baseline drop after irrelevant question 4 and prior to relevant question 5. Also notice the suppression in respiration at relevant questions 5 and 8.

Notice the normal respiration baseline prior to question 4, as well as at questions 6 and 7; at other points the baseline is below normal.

On test B the subject was told the same questions would be asked but that he should not answer any of them. Notice the more consistent respiration baseline and the more significant suppressions in respiration, indicative of deception, at relevant questions 5 and 8. (The control question 6 did not contain any deception responses in either test A or B).

In addition to the SAT attribute of eliminating some of the foregoing disadvantages of the audible answer procedure, the tracings obtainable by the SAT are as fully revealing of truthfulness or deceptions as the CQT (Figs. 4 and 5).

Figure 4



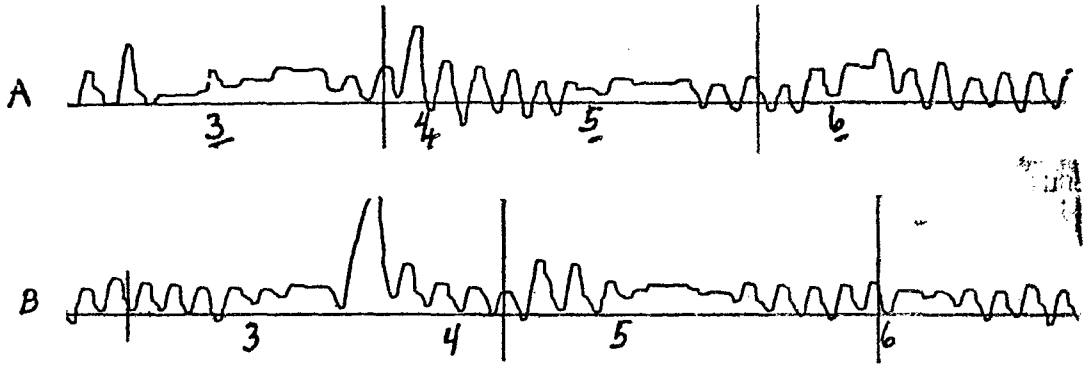
Respiration tracings of a subject suspected of an industrial sabotage. Questions 5, 8 and 9 pertain to the sabotage. Question 7 is irrelevant. Question 6 is a control question, "Did you ever steal anything in your life?"

On test A the subject answered all questions audibly (indicated by a plus or minus sign under the numbers).

On test B the subject was instructed not to answer at all. Note the suppression in respiration at question 6 on both tests A and B, indicating that the subject was not telling the truth on the control question. However, since he did not respond on the pertinent questions 5, 8 and 9, he was reported innocent of the sabotage, a finding later verified.

This case illustrates that the subject's oral answer to the test questions are not really necessary in order to achieve the same desired results.

Figure 5



Respiration tracings of a subject who was later proven guilty of a gasoline theft. Questions 3 and 5 relate to the theft; question 4 is irrelevant; question 6 is a control question: "Besides when you were a child did you ever steal anything?"

On test A the subject answered all questions audibly (indicated by a plus or minus sign under the numbers).

On test B the subject was instructed to answer silently. Note the extensive respiratory blocks on questions 3 and 5 and the lesser respiratory block on question 6, the control question, in both tests A and B. This illustrates again that it is unnecessary for the subject to orally answer test questions in order to indicate deception.

Procedural Advantages of the SAT

Experiments thus far indicate these advantages of the SAT:

1. It is less cumbersome and easier to explain to the subject than other tests;

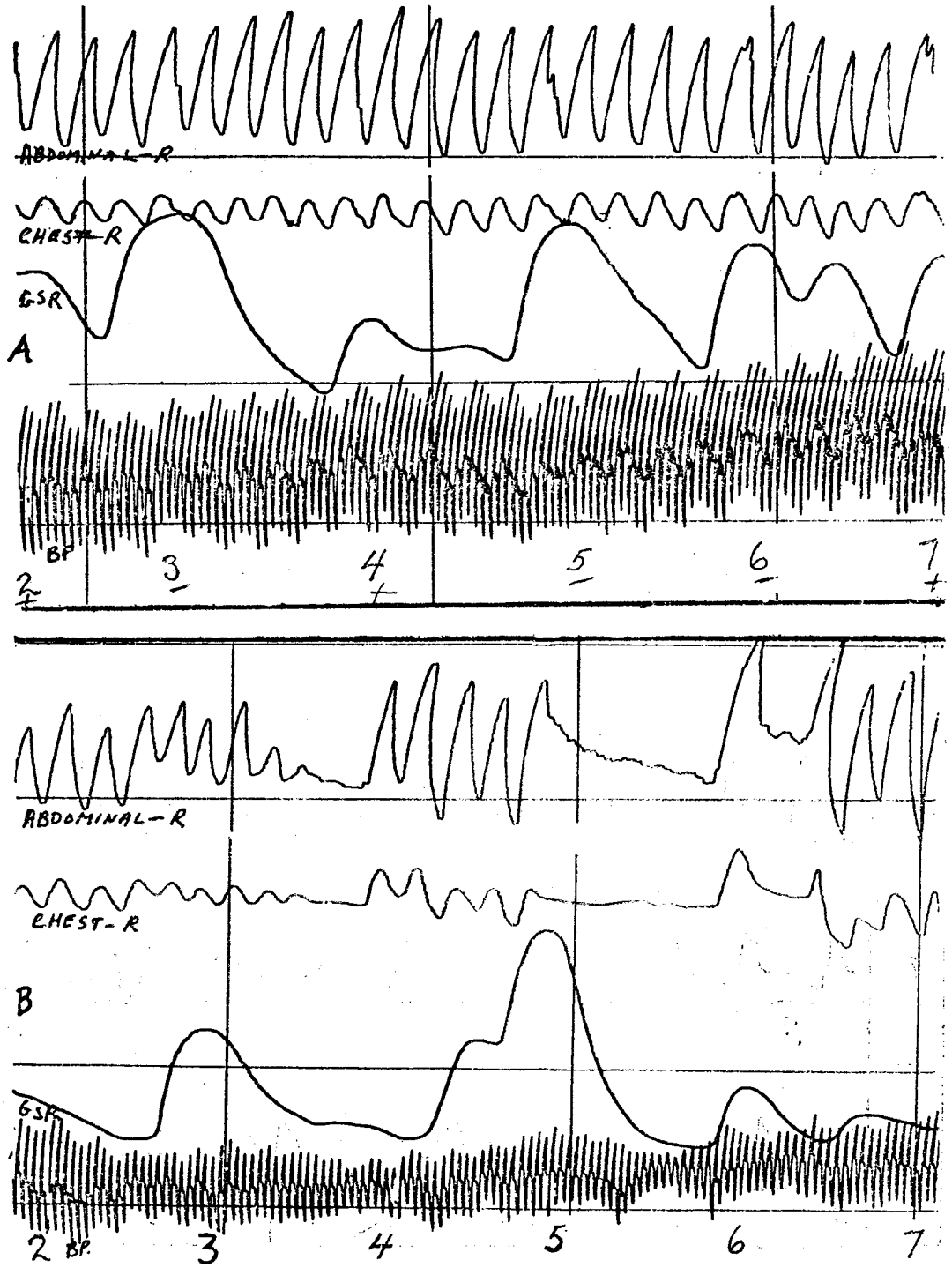
2. It requires less effort on the part of the subject during the test, with a consequent elimination of interfering factors such as coughing, sighing, and clearing of the throat.

3. It is unnecessary for the subject to mentally alert himself as seemingly is required during a "yes"-"no" test. In this manner the SAT assists in reducing anticipatory responses.

In addition to the foregoing advantages, some other unexpected ones occurred, namely:

1. The Enhancement of the Utility of the Galvanic Skin Reflex (GSR) Recordings. Previously the GSR recordings have been considered unreliable indicators of truth or deception when audible answers were required, but the GSR now provides very helpful indications when the SAT procedure is used.[4] (Fig. 6.)

Figure 6



Complete recordings of portion of two tests, including the abdominal and chest respiration tracings along with the GSR and blood pressure-pulse. (In preceding illustrations certain recordings were deleted because they were of little or no significance).

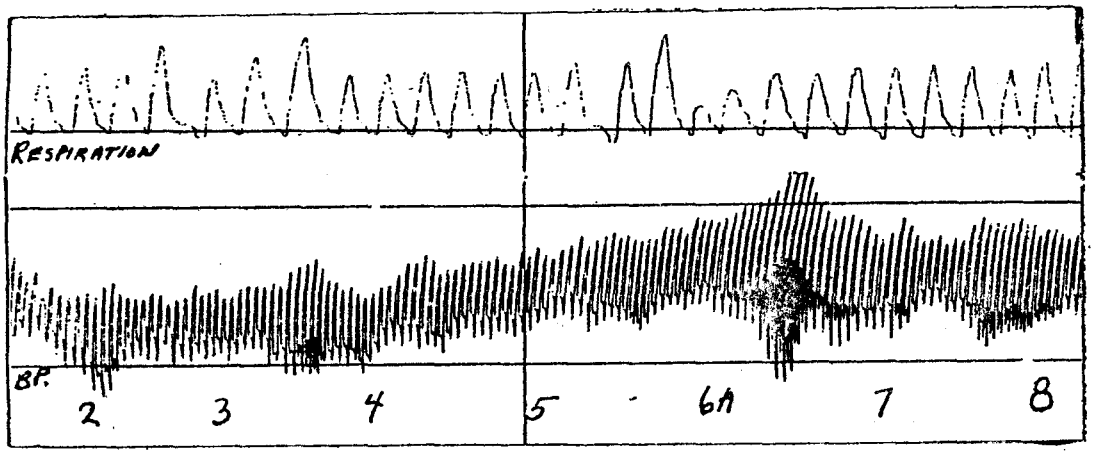
In this case (Fig. 6) the subject was accused of accepting a bribe. On test A when he answered orally, no significant reactions appeared in either the respiration tracings or the blood pressure-pulse recording, and the GSR tracing was not helpful in its indications. On test B, however, when the subject was instructed to answer test questions silently, highly significant reactions appeared in the respiration tracings and in the GSR. Observe the respiratory blocks at questions 3 and 5 in both the abdominal and chest respiration tracings, and the significant responses to questions 3 and 5 in the GSR. Also notice the lesser responses in the respiration tracing and in the GSR at question 6, the control question. (The blood pressure-pulse recording was of no significance in either test A or B.) Following the test the subject admitted the bribe and his confession was later fully corroborated.

Heretofore the GSR was depended upon by the authors only in specialized Peak of Tension (POT) tests. For example, if some money had been stolen from a desk drawer, and the suspect was not told about the exact location of the theft, POT test questions could be asked about other locations on the premises as well as the "desk drawer". When the guilty subject, the only one of the suspects who knew where the money had been, is asked questions about the location of the money, no significant GSR response occurs until the question is asked about the "desk drawer."[5]

Originally the POT test was described as a "peak of blood pressure tension test," but now with the SAT the GSR is also a valuable indicator.

2. An Extension of the Utility of POT Tests. When the SAT test procedure is used a helpful peak of tension is more likely to appear at the control question in a truthtelling person's record than when the oral answer test procedure is employed. (Fig. 7.)

Figure 7



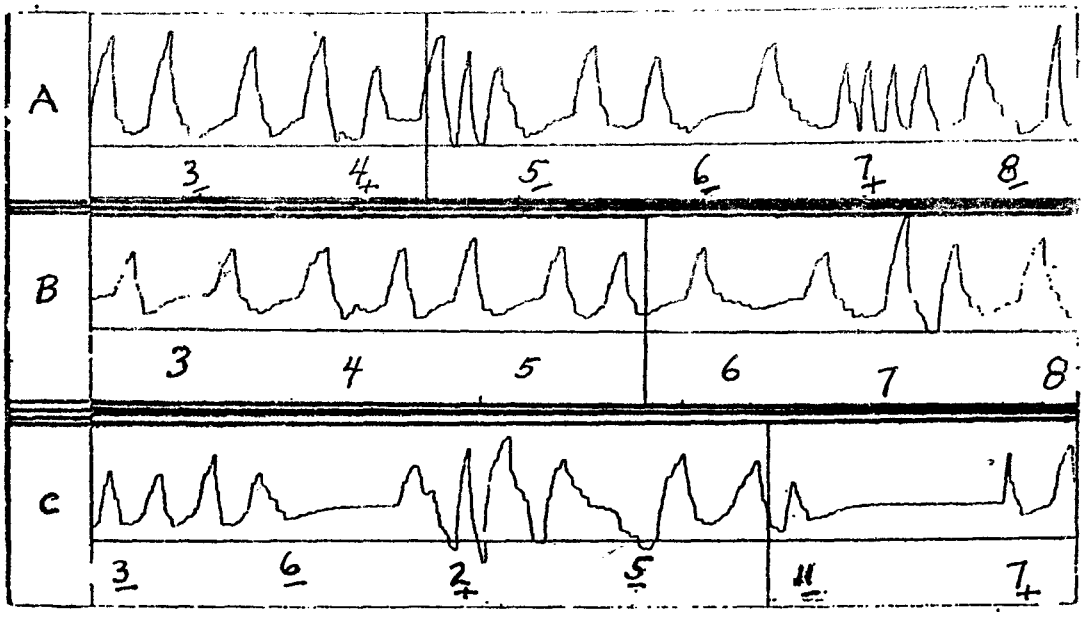
SAT records of an innocent subject suspected of being involved in a million dollar platinum theft. Notice the gradual rise in the blood pressure-pulse tracing (lower recording) up to control question 6A and a gradual decline thereafter, indicating a peak of blood pressure tension at that point. Also notice the significant suppression in respiration at 6A. (Questions 3 and 5 are relevant regarding the theft; questions 2, 4 and 7

are irrelevant. The subject's innocence of the theft was subsequently established, and he admitted to the examiner the he had lied to the control question.)

3. Stimulation Effect of the SAT. The third innovation discovered in experimenting with the SAT was the stimulating effect it had on subsequently conducted tests. It was learned that even if the subject fails to react significantly on the SAT, it tends to induce greater responses on later tests.

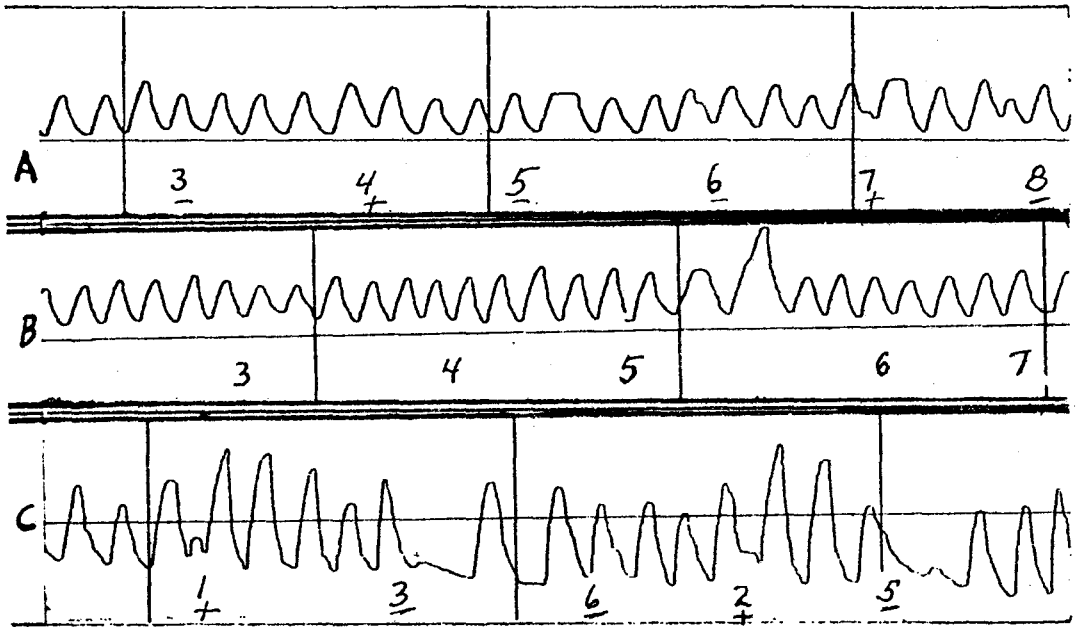
Although it is not definitely known why the SAT has this stimulating influence, it is suspect that during the SAT the subject searches his mind much more thoroughly than when he answers the questions aloud. This seems to cause him to select mentally only those questions which challenge him. It is further suspected that the stimulation value of the SAT may be the result of a feeling of helplessness it causes on the part of the guilty subject. During this test the subject is required to listen attentively to the words in the test questions, and he may wonder what he should do during this test. He realizes that he is not obligated to answer truthfully to himself, and he fears that if he does his test reactions will not be the same as when he answered aloud. In other words, no matter what the basic liar answers to himself during the SAT, he seems to have a greater fear of being detected. This causes a conflict in his mind, and when undergoing the subsequent test in which he again answers aloud, he is much more conscious of his guilt and more concerned as to whether his responses on the SAT and the test he is now experiencing will show similar reactions. This concern causea a mental conflict and it in turn stimulates the subject into reacting only to those questions which bear upon his guilt. (Figs. 8 and 9).

Figure 8



Respiration charts of a truthful female subject suspected of industrial espionage.(Fig. 8) Notice on test A the erratic respiration tracing. On test B, the subject's SAT, the respiration tracing seems to continue to be erratic, but the subject does show a more significant response to control question 6. Test C, a "mixed question test" (a standard section of the Reid test series) illustrates the stimulation effect of B, the SAT test. Notice the dramatic respiratory blocks to both control questions 6 and 11, and the lack of any response to the relevant questions 3 and 5 about the espionage. Control question 11, shown in "mixed question" chart C, was also asked on tests A and B, but due to the limitation of space could not be illustrated in sections A and B. The control question responses 6 and 11 on this subject's mixed question test left no doubt as to the subject's truthfulness regarding questions 3 and 5. The results were later verified as truthful by the confession of another individual.

Figure 9



Respiratory charts of a subject suspected of stealing $1,000.00 from her employer. On test A record notice the lack of any significant responses on any of the questions. It was conducted after a "card control test" which in most cases serves to stimulate a subject into responding, but in this case no significant stimulation effect was noted, and the subject's records were just as devoid of responses immediately after the card test as before it. On SAT B record, significant responses appear on relevant questions 3 and 5, pertaining to the theft of the $1,000.00, which would lead an examiner to a tentative conclusion of the subject's guilt. Test C record, however, solidifies that diagnosis. It is a mixed question test record on which dramatic suppressions in respiration appear at relevant questions 3 and 5. The subject later confessed the theft of the $1,000.00.

SAT a More Significant Indicator of Truth or Deception, Especially Near the End of the Test Series

A subject's talking or sighing several times during the test, in addition to answering "yes" or "no," causes respiratory disturbances as has already been illustrated. The examiner is then required to delay asking the next question until the respiration returns to normal. This delay may cause a pain reaction near the end of the test because of the additional time the blood pressure cuff must remain inflated to complete the test.

Recognition of Purposely Distorted Respiratory Tracings

A subject who is feigning a requirement to sigh or move while answering each question does not have that same opportunity during a test which requires no oral answers.

Conclusion

The current research has indicated that the SAT deserves a preferential place in future questioning techniques because it has the unique distinction of preventing defects in tests brought about in some degree by the subject's oral answers.

In addition, the SAT has produced several major innovations which have materially increased the accuracy of the Polygraph technique such as the added reliability of the GSR and the simulating effect the SAT has on subsequent tests in the Polygraph technique series.

The SAT also appears advantageous in detecting the evasive efforts of subjects who use their audible answers as an excuse to distort the Polygraph tracings.

Footnotes

[1] Some prior studies have been reported upon in which subjects were instructed not to answer. However, they were experimental using simulated laboratory situations. See 2 Psychophysiology, 10-13 (11956) "The Effects of Verbal Responses on the Laboratory Detection of Deception," Gustafson, Lawrence A. and Orne, Martin T. "S's were given one of three different response tasks to perform in a detection of deception experiment using GSR. The 1st group was told to say nothing as it heard each question, the 2nd to say "no" to each question, and the 3rd to make a word association to each question. Questions were presented in both a random and a known sequential order. There were overall differences among the three groups for both conditions of question presentation. The 2nd group was most frequently detected, the 1st next and the 3rd least frequently." Also see Biderman and Zimmer, The Manipulation of Human Behavior, 155 (1961). It is possible to query S. without demanding replies from him at all, to require yes-no answers to approximately framed questions, or to ask questions which require explanatory statements from S. Some experimental results (14) lead to the general proposition that if some overt response is required there are greater autonomic and muscular reactions to a stimulus. With larger responses one would expect differentiation between truth and falsehood to be easier. One experiment in the Indiana study confirmed this expectation for lie detection. Subjects who were required to reply

"yes" or "no" to questions gave more differential responses on the instrument (GSR).

[2] For details regarding the standard test procedure and diagnosis, see Reid, J., and Inbau, F.E., Truth and Deception: The Polygraph (Lie-Detector) Technique (1966).

[3] Supra note 1, at pp. 100-107.

[4] For a discussion of the G.S.R. see Supra note 1 at pp. 219-226.

[5] For a discussion about the "peak of tension" test, see Supra note 1 at pp. 127-140.

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THE PRETEST INTERVIEW AND ITS ROLE IN THE DETECTION OF DECEPTION

By

Philip A. Mullenix and John E. Reid

Abstract

The pretest interview is discussed with emphasis on its role in the process of detecting deception. Particular attention is given to conditioning the subject, selection of control questions, the use of behavior provoking questions, and the analysis of the subject's responses, both verbal and non-verbal. The authors warn that in evaluating behavior it is important to perceive clusters of behavior that are characteristic of truth or deception. The authors conclude that the chart tracings are the final product, and it is upon those tracings that he will base his opinion of truth or deception. [N.A.,Ed.]

Introduction

According to the regulations promulgated by the Illinois Detection of Deception Examiner Act, an examiner is prohibited from administering any detection of deception examination without first conducting an interview with the prospective examinee. It is not uncommon for polygraph examiners to lose sight not only of the regulation itself, but, more importantly, of the significance of the pre-test interview within the context of an effective polygraph examination. The pre-test interview must be more than a mechanical review of the impending test questions in conjunction with a few stock behavioral provoking questions asked in rote manner.

The point of this discussion, then, will be toward answering why the pre-test interview is important in the whole process of detecting deception and how an examiner may more profitably utilize that short period of communication with the examinee in facilitating his final diagnosis of truth or deception.

It must be kept in mind, however, that the examiner's diagnosis of his subject's truthfulness will ultimately be determined by a full analysis of all relevant factors. The most prominent factors to be considered are the case facts, the subject's behavioral responses both before and during the examination, and, of course, the polygraph charts themselves. To ignore any of these factors in arriving at a diagnosis of truth or deception could easily lead the examiner to an erroneous conclusion. On the other hand, by intelligently incorporating all three of these factors into a single process of detecting deception, a polygraph examiner will certainly enhance the quality of his diagnosis.

It is toward that end that the pre-test interview plays its vital role. As you will see, the foundation for the entire examination is

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established during the interview through an in-depth analysis of the case facts with the subject, an objective appraisal of the subject's verbal and non-verbal behavioral response, and by proper conditioning of the subject so as to obtain clear and unambiguous polygraph results.

Conditioning of the Subject

In that the final tangible product of a polygraph examination is the set of charted tracings which indicate the subject's emotional responses, the person on whom the test is to be conducted must be in a proper frame of mind in order for the test records to bear any conclusive results. Responsibility for ensuring that a subject's physical and emotional state is compatible with the testing procedure rests squarely upon the shoulders of the polygraph examiner. It is incumbent upon him to single out subjects who, for various reasons, may not be fit for testing at a particular time. Furthermore, the examiner bears full responsibility for stimulating the subject in accordance with the polygraph questioning technique which he chooses to apply (such as the Control Question or the Backster Zone Comparison Technique, etc.) These efforts by an examiner, which are generically referred to as means of "conditioning the subject", must be made during the pre-test interview.

The most frequent occasions in which the necessity of "conditioning" arises are those that are most superficial and easily observed by an examiner who is consciously aware of his subject's suitability for a polygraph test. Certainly, physical defects that impair a subject's ability to take a test should be immediately obvious to any examiner. But other influences are less apparent. Emotional disturbances, whether permanent or temporary, need to be recognized as do excessive nervousness or anger within a subject. If an examiner neglects to allay the nervousness of an overly apprehensive subject or calm the aggression of one who is experiencing anger at the prospect of taking a polygraph examination, the end result may be test records simulating deception but produced, in fact, by the subject's negative attitude toward the test. Additionally, the examiner must be aware of the possibility of alcohol or drug consumption by the subject, as well as any other influencing factors such as prior interrogation or some shocking experience which the subject might have undergone just prior to his examination. Such events could lead to emotional exhaustion by the subject and a concommitant inconclusive or deceptive polygraph diagnosis by an examiner who failed to perceive the existence of these interfering influences during the pre-test interview.

A slightly more sophisticated facet of the "conditioning" process lies in the proper stimulation of a subject by the examiner in accordance with the particular polygraph technique being applied. The object of the examiner's stimulation efforts is to convince an untruthful subject that his lies will most certainly be detected while simultaneously accentuating the responses characteristic of truthfulness in one who is, in fact, telling the truth.

For instance, under the Control Question Technique, it is imperative that the examiner use his pre-test interview to convey to the subject an impression of extreme concern for the control questions being asked. Development of effective control questions is undoubtedly the most critical thing that an examiner will do during his interview. If the examiner fails

to work up his control questions properly, the strength of the technique will likely be diminished. A truthful subject deserves every opportunity to establish his innocence, and where the control questions are weak or ineffectively stated, their inherent ability to accentuate a person's truthfulness to the issue is dampened, if not entirely eliminated.

Therefore, it is the examiner's responsibility during the pre-test interview to select control questions that not only relate to the underlying motive of the offense under investigation, but they must also evoke a degree of genuine concern on the part of the subject. This concern should be clearly visible to the examiner, for if the subject is able to easily deny ever participating in the conduct suggested by the question, the examiner must either select an alternative control issue or resort to asking whether the subject had ever tried or even thought about doing such a thing. In any event, the examiner must display a keen interest in the subject's answer to the control question as well as an attitude of expectation that the subject should have committed several such infractions throughout his lifetime. Any admissions made by the subject should be narrowed down to specifics, and the final version of the test question should be worded to exclude only those explicit admissions, thereby leaving the subject with a virtual known lie to his control question response.

Control question development is a vital portion of an examiner's pre-test interview. He must first select an appropriate question, then he must pose it in a manner that will elicit sincere concern from the subject, and he must also be alert to whether the necessary degree of concern is prompted by that particular question. If the examiner falls short in this progression toward finalizing his control questions, his subject - particularly a truthful subject - has not been properly conditioned for the examination, and the examiner's ability to diagnose truth or deception has been hindered.

In addition to accentuating the truthful subject's test responses, an examiner should be equally concerned with the conditioning techniques available to him during the pre-test interview for the purpose of convincing an untruthful person that his lies will be detected. An effective tool which the examiner may employ is a simple explanation to the subject of the body functions being monitored by the polygraph instrument followed by a brief description of the physiological changes ordinarily precipitated by deception.

If a subject enters a polygraph situation under the assumption that he can "beat the test" by exercising supreme control over his own thought process, he may have an edge that could serve to minimize his responses. If that same subject, however, is told immediately prior to commencement of the examination that the physiological functions recorded by the polygraph are governed by one's autonomic nervous system, something over which a person can exercise no conscious control, then his own confidence gives way to a slight doubt. And if he is further told that a lie produces a specific type of response that becomes magnified by a person's attempts at inhibitiing its occurrence, then that doubt becomes a more formidable stimulus to the subject as he perceives his ability to control the situation slip farther away from him. Thus, the examiner may, in a very deliberate fashion, take advantage of the pre-test interview to break down a subject's defenses to the polygraph instrument and the impending testing procedure.

The examiner's general demeanor throughout the interview will go a long way toward conditioning a subject, whether truthful or untruthful, for the upcoming examination. You know from your own life's experience that when you perceive someone within a service oriented business as being somewhat less than competent, you will be more inclined to find fault with the results of their work than if they had initially presented an image of quiet confidence. The same principle exists between subject and polygraph examiner during the interview. While the examiner is engaged in his business of questioning the subject, the subject is appraising the examiner in an equally critical manner for signs of weakness or inability. If an untruthful subject detects uncertainty in the voice and gestures of his examiner, he will believe that he can control subsequent events and thereby defeat the test. In the event that a truthful subject perceives undue hesitancy on the examiner's part, his confidence that the test would most certainly turn out favorable to him will naturally be shaken. In either case, "conditioning" of the subject takes a reverse direction, and the likelihood of an inaccurate polygraph interpretation may follow suit.

Therefore, it is not enough for an examiner during the interview merely to avoid having a negative influence on his polygraph results by keeping himself from appearing uncertain or at all hesitant. Instead, he must project his competence through an assertive voice and confident gestures with an organized train of thought so as to convey to a truthful subject that the test will indeed reflect their innocence. On the other hand, such action by an examiner will serve notice to an untruthful subject that the examiner is quite capable of detecting that person's lies, and, more importantly, signifies to the subject that the intangible element of control over the situation remains with the examiner and not with the subject.

Behavior Provoking Questions

Closely associated with the process of "conditioning" is the matter of eliciting from a subject during the pre-test interview certain behavioral patterns characteristic of one's guilt or innocence. The premise upon which is built the theory of the "behavior provoking question" is that the internal anxiety being experienced by an untruthful person at the time of a polygraph examination will be apparent to an observant examiner who notes the physical manifestations of that tension in response to casual questioning during the interview. Conversely, a truthful person will not experience that internal anxiety since he is well aware of his own innocence. Therefore, his outward behavioral patterns during the pre-test interview will be conspicuously devoid of the typically guilty expressions when asked the very same questions.

It is the examiner's responsibility during the pre-test interview not only to ask the appropriate behavior provoking questions, but also to accurately categorize the subject's responses as being symptomatic of outright deception, guilty knowledge of some aspect of the offense, or more apprehension over the testing situation. The remainder of this section, then, will focus upon two questions: 1) What "behavior provoking questions" need to be asked during the interview, and 2) How the responses are to be evaluated.

Ideally, a pre-test interview should be composed of non-abrasive and

non-accusatory questions that force the subject to discuss his own personal attitudes toward the incident under investigation as well as toward the hypothetical offender. When the examiner poses questions in this regard, the subject will be required to produce an answer knowing, by virtue of the fact that he is being given a polygraph test, that there is at least some suspicion of his own involvement in the matter under investigation. For a truthful person, this creates no particular problem. His thought process will revolve around unlawful consequences which he, himself, did not produce. His view of the incident as a non-participant will be critical, direct, and punitive in tone toward the actual perpetrator. The truthful person's answers will generally be quickly offered and unaccompanied by uncertain or anxious gestures of the body.

An untruthful person, however, will typically respond in a far different manner. Of over-riding concern to him is the fact that he is being asked to very nonchalantly talk about himself and some unlawful act which he committed. This alone is a difficult task, but it becomes even more formidable when the thought of impending discovery through a lie detector test looms on the immediate horizon. Unlike the truthful person, whose answers are automatically produced by a natural confidence over their own innocence, a guilty person must first decide whether he should fabricate a harsh and critical approach toward the act which he committed. Then he must decide how to present that look of innocence in a convincing manner. This deliberation is usually accompanied by physical gestures indicating the subject's internal anxiety, and the verbal responses are generally far less convincing and offered with a greater degree of uncertainty than that which would be heard from a truthful person.

There exists no all encompassing formula of questions that will produce these results in every interview situation. There are, however, definitive categories into which inquiries can be made in order to elicit from the subject the desired behavior symptoms. Naturally, an examiner must incorporate into his evaluation the content of the subject's verbal answers as well as the outward physical manifestations of his internal emotional tension.

The first category of pre-test interview questions may be termed the direct inquiry in which a subject is asked point blank whether he committed the act in question. In that a guilty subject's apprehension over the polygraph test is ordinarily at its highest level soon after the person has been escorted into the examination room, the direct inquiry will have its greatest effect, insofar as producing strong behavior symptoms is concerned, if it is presented early in the interview. Typically, a brief synopsis of the issue of the examination is given whereupon the question is posed: "Mike, how do you stand on this?", or "Mike, did you kill Valerie Jones?"

The response of an innocent person will be an immediate unequivocal denial, and it will be accompanied by an alert posture and direct eye contact from the subject. The untruthful person, on the other hand, is just getting acclimated to a threatening environment and is wondering whether this question is even part of the test. While his verbal answer at this point will most assuredly be a denial, it will be offered weakly or with a qualification, and the subject will exhibit perhaps his most dramatic behaviorial responses indicative of his own uneasiness. An untruthful

subject may shift in his chair, cross his legs, or seek out something to manipulate within his hands. It is quite likely that he will divert his eyes away from the examiner the moment his verbal answer is offered.

Another behavior provoking question that falls within the "direct inquiry" category is one in which the examiner asks whether the subject believes he will pass the lie detector test. Here, a truthful subject will respond in a positive fashion, both verbally and behaviorally. But an untruthful person will volunteer nebulous excuses, either in his physical or mental makeup, that will cause the test to indicate deception. While one may earnestly question the reliability of a polygraph examination, it is generally an untruthful person who will argue that point as a reason why the test results ultimately point an accusatory finger in his direction.

A second category of behavior provoking questions relates to the punitive aspects of the subject's own attitudes toward the person who committed the offense. When a polygraph subject is asked to convey his own personal opinion as to just what punishment he believes should be meted out to the guilty person, an innocent person is asked to evaluate a distant third party, who seemingly has broken the law. This emotional detachment which he feels at that moment from any one particular guilty individual will allow a truthful person to look at the matter objectively and quite critically. Therefore, he is likely to return an answer that carries harsh punitive measures. An untruthful subject, however, has been asked essentially to pass sentence upon himself. Thus, his verbal response may suggest that consideration should be given to the circumstances surrounding the event, or he may indicate a punishment that is ridicuously lenient by current social standards.

Associated with a subject's attitude toward punitive matters is his attitude toward the polygraph test in general. When an inquiry is made as to just how the subject feels about submitting to a lie detector test, a truthful person will welcome it as an opportunity to establish his innocence. An untruthful person will naturally respond in a defensive manner as he will perceive the test as a threat to his future well being. Thus, within the context of a pre-test interview, a truthful person will behave in quite a relaxed fashion when such an inquiry is posed while an untruthful person will display uneasiness and a defensive aggression in his verbal responses and physical demeanor.

The third category of behavior provoking questions involves providing the subject with an opportunity to cast suspicion away from himself and onto someone else. When a subject is asked if he suspects anyone in particular of having committed the act, an affirmative response will generally be characteristic of the subject's truthfulness. Truthful individuals will not only name suspects four times more frequently than their untruthful counterparts, but they will also provide plausible explanation to substantiate their feelings, for detailed information and a directness in delivery is symptomatic of the difference between the truthful and the untruthful subject.

But an examiner should be alert for the exception. While inquiries into such things as a person's honest suspicions are helpful in identifying truthful individuals, they serve a dual purpose of allowing a guilty

party to imply that his own wrongdoings were more likely carried out by another. In fact, an untruthful person might eagerly answer a question as to his own personal suspicions by accusing individuals who, by the case facts, are incapable of committing the offense or are the least likely among all the suspects.

The final category of behavior provoking question deals with a person's own background relative to the incident under investigation. Specifically, to ask a subject during the pre-test interview whether he had ever thought about committing the very same offense will lead to a rather dramatic demarcation in answer and behavior between the truthful and untruthful individual. Whereas a truthful person will display some degree of annoyance at the insinuation coupled with a strongly expressed denial of having thought about it, an untruthful person will seek to convince the examiner that it would be abnormal for a person not to entertain such thoughts. Concurrent with this line of questioning, it would also be appropriate to inquire as to whether anything similar to this incident had ever happened to the subject during his lifetime. An affirmative response to this question, if nothing else, can alert an examiner to the possibility that the subject may be a repeat offender who feels little remorse for his conduct and even less fear of detection. (This, in turn, may necessitate application of certain stimulation techniques previously discussed in the section entitled "Conditioning".)

One additional question pertaining to a subject's background relative to the issue on the test is whether he told anyone beforehand that he would be taking a polygraph examination. Assuming that the subject had advance notice of the test and sufficient opportunity to advise friends and family members of the rather unique experience that he would undergo, a truthful person will likely tell anyone in whom he has any degree of confidence about the impending test. An untruthful subject, however, will certainly attempt to keep the test and its predictable results to himself. Furthermore, if a subject did tell someone about the test, it might be worthwhile for the examiner to follow that up by asking just what that other person's reaction was. It may turn out that the third person had innocently given the subject some erroneous information about the content or conduct of a polygraph examination that could conceivably disturb the subject during his test. Similarly, the subject might deliberately have sought out information on how to try to "beat the test." If the subject is questioned directly about this possibility, his behavior may belie his verbal negative response and thereby alert the examiner to the presence of outside influences as a factor when interpreting the polygraph charts.

The examiner's function throughout this process is quite obvious. For it is he who must not only ask the appropriate behavior provoking questions but also observe and record the verbal responses as well as the nonverbal physical symptoms of the subject's anxieties. Therefore, the examiner must find the right blend between the mechanical task of note-taking and the equally critical task of observing the subject's behavior. One area must not restrict the examiner's efficiency in the other area.

If the examiner spends all of his time during the interview furiously writing down everything that eminates from a subject's mouth, then he will lose out on behavior symptom observation. Conversely, if an examiner neglects the subject's verbal responses or fails to make written notations

of the subject's behavioral changes as they occur, he will be unable to recall critical information during the process of rendering his final diagnosis of truth or deception. Therefore, it is incumbent upon the examiner to find, at his own pace, the proper balance for note taking on the significant responses so as not to diminish his fundamental capability of visually recognizing behavior symptoms characteristic of the subject's internal anxieties. Furthermore, the examiner must be mentally free to improvise or deviate from his prescribed line of questioning should the need arise. If he is consumed by excessive note taking, the examiner's ability to think extemporaneously and ask vital "follow-up" questions will suffer correspondingly.

In order to gain a full appreciation of the concept of the "behavior provoking question", it is wise to revert back to its underlying purpose within the context of a pre-test interview. The questions which have been outlined throughout the preceding paragraphs are intended to produce observable behavior that is symptomatic of the subject's guilt or innocence. The process of evaluating that behavior is a delicate one requiring the examiner to perceive clusters of behavior which are characteristic of either truth or deception. In the absence of these clusters, an examiner's behavioral observations assume merely a neutral significance in his overall function as a detector of deception. A single incriminating response, either verbal, non-verbal, or both, to a single behavior provoking question is in no way dispositive of a person's guilty or innocence. There must be an obvious tendency by the subject toward answering a majority of these questions in either an incriminating or an exonerating fashion before the examiner may draw any conclusions in reliance solely upon his behavioral observations.

Research studies have shown that a polygraph examiner's accuracy in detecting deception may be dramatically enhanced through observation of a subject's behavior (Wicklander & Hunter, 1975). However, caution must be exercised in dealing with behavior symptom analysis not to lend excessive credence to one answer to a single question while ignoring a contrary trend of behavior that predominates the remaining questions. Additionally, an examiner must guard against the possibility of misinterpreting the content and accompanying behavior of answers born, for instance, of a meek or inherently forgiving personality.

Fact Analysis

An in-depth discussion on the evaluation of case facts is an extensive topic if taken by itself and is therefore beyond the scope of this paper. Instead, the purpose of its inclusion here is to create an awareness that allowing a subject to review the case facts during a pre-test interview can plan an integral role in the overall process of detecting deception.

From a purely technical standpoint, the fact analysis phase of the pre-test interview will provide a fundamental basis for the formulation of test questions. The most basic step for the examiner to take is to see that the subject's knowledge of the facts is essentially the same as that which the case investigator had previously provided. Any major discrepancy creates obvious problems in formulating appropriate questions that will resolve the issue at hand.

Furthermore, when a subject is given an opportunity to freely discuss the case facts in detail, an examiner can note the subject's own chosen vocabulary in reference to the names, places, functions, or other terminology relevant to the issue. The examiner is thereby able to alleviate any ambiguity between the language which the subject understands and those ideas which the examiner intends to convey. By incorporating the subject's own terminology (within the bounds of good taste and acceptable grammar) into the actual test questions, an examiner minimizes the chances of a subject misunderstanding the inquiries presented while simultaneously reinforcing the accuracy of his diagnostic results.

A review of the case facts with the subject also allows an examiner to observe in untruthful individuals certain behavioral response characteristics of his anxiety over the fear of detection. Casual yet thorough questioning of the subject on the case facts puts a guilty party on the defensive. Certainly he will be concerned not to reveal too much about the incident, for to do so would be to incriminate himself by providing information that could be known only by the actual perpetrator. In fact, he may be mentally preoccupied with his efforts at maintaining fabricated alibis on previous occasions. The doubts he may experience over the consistency of his version of the events will manifest themselves in hesitant voice and gesture as well as in a willingness to vacillate or change his story at the slightest suggestion of contradictory evidence.

In stark contrast to this, however, is the conduct of a truthful person as he recounts the facts of the incident as he knows them. Since an innocent party is either replaying verbally something which he witnessed or discovered or is relaying information that had been provided to him third party, that person's behavior will be unquestionably forthright and direct. When an examiner presents contradictory statements or evidence, whether authentic or fabricated as in a "baiting" technique, the truthful subject will adhere to his original version of the facts rather than exhibit the wavering uncertainty symptomatic of the self doubts in an untruthful person.

It is in the fact analysis of the pre-test interview that a polygraph examiner assumes the role of an investigator establishing the relationship not only between the subject and the even in question, but also the relationship between the subject and the remaining potential suspects. Naturally, the examiner should devote primary attention to the access (or lack of it) which the subject might have had in order to commit the unlawful act. That is most obvious. But on the fringes of this line of inquiry is whether the subject observed any peculiar behavior in other individuals within a given area at a specified time and whether any unusual activity occurred within that physical and temporal framework.

While this may ring familiar to you as a previously discussed behavior provoking question as to the subject's own suspicions, the point of these inquiries here is not so much to evoke physical symptoms of tension as it is to obtain valuable information on other possible suspects. In the event that the subject is innocent, there may be a vital piece of information on the guilty party which needs to be subtly drawn out of the subject during the fact analysis phase of the pre-test interview.

Ideally, a disinterested third party under the circumstances of a

polygraph examination may provide answers to questions which otherwise might never have been asked by anyone. But this type of information can be extracted only if the examiner is alert to the potential of his interview by expanding the scope of his pre-test inquiries beyond the immediate question of the subject's primary responsibility for the unlawful consequences. Where an employee theft is motivated by feelings of insufficient compensation for services rendered, it is likely that another employee, who may also be subjected to a polygraph examination as a primary suspect, previously overheard the actual perpetrator remark that he would one day "get even" with the company for being underpaid. If the examiner then focuses his concentration during the interview solely upon whether this ultimately innocent subject committed the theft, he may correctly exonerate him. But in so doing, the examiner has lost a vital advantage toward resolving the crime and identifying the guilty party simply by ignoring a method of fact analysis at his disposal through the pre-test interview.

Interrogational Theme Discovery

At this point, it is appropriate to mention one aspect of the pretest interview which, though not directly related to the process of detecting deception, will benefit an examiner during the subsequent interrogation of an untruthful subject. In his approach to every pre-test interview, an examiner should exercise a certain degree of foresight toward the possibility of an interrogation by attempting to determine from the subject what factors might have motivated him to commit the unlawful act.

This process need not and should not assume an accusatory tone. The examiner may easily interject into his non-abrasive interview additional inquiries such as "Why would anyone want to do something like this?" A guilty subject can be taken aback by the personal nature of the question. For he has been asked to reveal his own private motivation for his actions, and frequently his answer will reveal precisely that. The subject may dwell on his answer and seek to minimize the moral significance of the offense by "convincing" the examiner that honorable intentions might have been behind the unfortunate consequences. If an examiner is alert to the significance of these questions and the answers which follow, he will have obtained through his pre-test interview the most sensitive and ultimately successful interrogational theme for use with that particular subject.

In the event that such questions are posed to innocent subjects, their answers may certainly reflect mere subjective speculation. On the other hand, the verbal responses may have been prompted by some piece of information which the subject has regarding a person who, within the subject's own mind, is the prime suspect in the case. If an innocent subject strongly suspects a particular individual, and that suspicion is born of a knowledge that the suspect, for instance, was in dire financial straights even before the recent arrival of his second baby, that information could be extremely helpful as an interrogational theme should the larcenous parent ultimately fail his own polygraph test.

Furthermore, when an examiner poses questions during the interview such as "Do you think it would be easy for a person to have done this?" or "How do you think a person could have done this and gotten away with it?" a guilty subject may "hypothetically" present the very means by which he carried out the offense. But even more important is the fact that such

questions invite a subject to blame others, including the victim, for provoking the attack or acquiescing in security measures that beg the unlawful consequences. The subject's own statements may then be used verbatim by the examiner during a subsequent interrogation as a means of sympathizing with the subject for having been unfairly tempted to commit the crime.

Conclusion

Throughout this discussion, it has been our intention to illustrate the fact that a polygraph examination is not simply a mechanical procedure whereby questions are asked and answers are automatically interpreted as truthful or untruthful. Instead, the cumulative process of detecting deception is a direct result of an examiner's capabilities in areas that transcend the polygraph records themselves.

The charted tracings that constitute traditional polygraph results are the final product of an examiner's efforts, and it is upon those tracings that he will base his opinion of truth or deception. However, that which precedes the actual examination, namely the pre-test interview, is vital to the diagnostic examiner not only in obtaining unambiguous records but also in the overall interpretation of a subject's truthfulness. As we have seen, it is the examiner who bears the responsibility to condition and stimulate the subject before a proper polygraph test can be administered. It is the examiner who must elicit and observe those physical symptoms of a subject's inner anxieties or confidence over his own guilt or innocence. And most importantly, it is the examiner who must assimulate these factors together with the polygraph results into his ultimate diagnosis.

Therefore, in order to fulfill his responsibilities as a diagnostician capable of detecting deception, the polygraph examiner must utilize his pre-examination interview in those areas of fact analysis, subject conditioning, and behavioral observation. An examiner who consciously approaches each examination in this manner will not only enhance his own proficiency in obtaining definitive results, but will also lend greater credibility and consistency to the entire polygraph profession.

Reference

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JUDICIAL RECOGNITION OF THE POLYGRAPH (LIE DETECTOR) TECHNIQUE

By

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Detection of deception is basic art practiced daily in the courtroom by judges, lawyers and juries. The witness' demeanor while testifying, such as his manner of speaking, his facial expression and his physical reactions are critically observed for the purpose of evaluating his truthfulness. Even cross-examination itself is designed to elicit the truth and test the trustworthiness of the witness' assertions.

Considering these common legal procedures, why then do the courts as a general rule resist accepting the results of the polygraph technique as evidence? An evaluation is in order of this technique, past, present and future, as to its reliability, validity, credibility and trustworthiness.

The Past

The United States Court of Appeals for the first time ruled on deception test evidence in Frye v. United States, 293 F. 1013 (D.C. Cir. 1923). Frye was on trial for murder and offered as evidence in his behalf the results of a Marston "systolic blood pressure" test. The court refused to permit Dr. Marston to testify concerning his results and upon appeal this ruling was affirmed.

It was the opinion of the court that the Marston test was still in the experimental stage and not generally accepted among physiological and psychological authorities, the particular field in which it belongs, and therefore upheld the decision of the trial court in refusing to accept Dr. Marston's expert testimony. It is of interest to note that two years after Frye was imprisoned, another man confessed the murder and Frye was released.

The court was right in rejecting the testimony in Frye regardless of the ultimate evidence of his innocence. Among other technique deficiencies, the instrument used by Marston was crude and the method was cumbersome; it required inflating and deflating the blood pressure cuff before and after each question and also noting the systolic blood pressure recording before and after each question.

Most courts up to the present time quote Frye as a basis for rejecting polygraph test results as evidence. But it is time for a reexamination of the Frye case to determine whether the present day polygraph technique has reached the status set forth in that opinion, namely: (1) Does the present technique possess a reasonable measure of precision in its indications? and (2) Is it ready for acceptance in the field of science to which it belongs or by the group of specialists within the field?

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Before analyzing the present-day status it must be clearly understood that the polygraph itself is not an automatic indicator of truth or deception. It is not a lie detector as such, but rather an instrument which is capable of recording physiological phenomena, i.e., respiration and blood pressure, etc., that may be used for the application of a reliable technique for diagnosing deception. Therefore, we shall consider the polygraph technique as a whole: the instrument, the questioning technique, the accuracy, and the examiner's qualifications, to determine whether or not it has attained a reasonable measure of precision -- the first prerequisite of Frye.

The Present

The polygraph instrument today is refined to the extent that it dependably records certain physiological changes that occur during deception. Compared to Marston's crude systolic blood pressure instrument, it is a highly sophisticated and accurate recording instrument.

The accuracy of the polygraph using the proper instrumentation and an adequate questioning technique, can be demonstrated by reporting on two recent cases. In doing so, two types of questioning techniques will be illustrated, namely, "the control question technique" and "the peak of tension technique."

Before administering any test a competent examiner will explain to the subject the purpose of the test and the nature of the instrument. Also during the pretest interview, the examiner will seek to condition the subject for the test by relieving the apprehensions of the truth telling as well as satisfying the lying subject of the efficacy of the technique. Prior to each test the subject is told precisely what the questions will be and he is also assured that no questions will be asked about any offense or matter other than that which has been discussed with him by the examiner. Surprise has no part in a properly conducted polygraph test. 50 A.B.A.J. 470 (1964). The subject is also informed that several tests may be required before the examiner will attempt a deception diagnosis.

Control Questioning Technique. The control question technique consists of 10 questions, each requiring either a "yes" or "no" answer. Four of the test questions relate to the matter under investigation: four are irrelevant to the matter under investigation, such as: "Is your first name John?" "Did you ever go to school?" which are asked merely for the purpose of establishing the subject's normal pattern of responsiveness. Questions number 6 and 10 are control questions that must be answered "no." They are unrelated to the matter under investigation but are of a similar, though less serious nature, and questions to which the subjects will in all probability lie or at least his answers will give him some concern with respect to their truthfulness or accuracy.

For instance, in a burglary case the control question would relate to theft, such as "Did you ever steal anything in your life?" or, if the subject made some admissions regarding stealing the question would be changed to, "Besides what you told me about, did you ever steal anything else?" The response or lack of response to the control question by a suppression in the respiration or a rise in blood pressure is then compared with what appears in the tracing when the subject was asked the crucial question

about the burglary. If the subject responds more to the control question that he does to the crucial question, this is considered indicative of truthtelling. On the other hand, a greater response to the crucial question in comparison to no response or only a slight response to the control question is suggestive of lying, although several other test procedures are required before a definite conclusion to that effect is permissible.

Nine States Have Licensed Polygraph Testing. The polygraph technique has reached the professional stage; nine states -- Arkansas, Florida, Georgia, Kentucky, Illinois, Mississippi, New Mexico, Texas and Virginia -- have now passed laws licensing examiners. Several more jurisdictions, including the District of Columbia, have declared their intention to do so. Illinois, for example, required a polygraph trainee to have a minimum of college degree at the baccalaureate level; to complete six months of internship training under a qualified examiner; and to pass a State Board examination as to his competency. As in all new fields that are not completely regulated by state licensing, incompetents do appear, but conscientious efforts are being made by the American Polygraph Association to disqualify inadequately prepared persons.

The following estimates indicate the necessity for a well-qualified examiner: In about 25 percent of the polygraph cases, lying or truthtelling may be so clearly disclosed by the nature of the reactions to relevant or control questions that the examiner will be able to point them out to any nonexpert and satisfy him of their significance. In approximately 65 percent of the cases, however, the indications are not that clear; they are sufficiently subtle in appearance and significance that they require expert interpretation. In roughly 10 percent of the cases, the examiner may be unable to make any diagnosis at all due to some physical, mental or emotional defect in the subject.

In many cases the truth concerning who committed an offense may never be ascertained by confessions or subsequently developed factual evidence of guilty or innocence. Proof is often lacking, therefore, as to whether the examiner in any given case was right or wrong. My actual case experience over the years has involved the polygraph examination of over 35,000 persons suspected or accused of criminal offenses. On the basis of that experience, I am confident that the technique when properly applied by a trained, competent examiner is very accurate in its indications. The relatively few errors which do occur favor the innocent, since the known mistakes in diagnosis almost always involve a failure to detect the lies of guilty subjects rather than a finding of lying on the part of truthtelling innocent persons.

The polygraph examination should not be held to any greater degree of accuracy than any other scientific endeavor relating to the examination of a human being. Furthermore, perfection in test results is not a prerequisite to the admissibility of evidence obtainable by use of scientific instruments or techniques. Wigmore, Evidence, § 990 (3d. ed. 1940).

Judicial recognition is given where it can be shown that the particular technique has a reasonable measure of precision in its indications. In this connection it is appropriate that some judgment be made regarding the polygraph technique in comparison to other kinds of evidence. The polygraph technique involves inconclusive reports in about 10 percent of

the cases. In this regard a comparison should be made to the inability of the criminalist in other types of expert opinion evidence to develop either connective or exclusionary results of any probative value due to the evidence being insufficient, mutiliated, fragments or, in some cases, contaminated. Furthermore, it is not uncommon to have experts testify in complete opposition to one another in such areas as firearms identification, hair and fabric comparisons, and other specialized application of the physical sciences. In a document case in Ohio, four handwriting experts testified for the plaintiff and three for the defense. Even medical and psychiatric testimony shows a substantial disagreement as disclosed in everyday courtroom testimony. After Jack Ruby murdered Lee Harvey Oswald, the alleged assassin of President Kennedy, Ruby was examined extensively by 12 of the country's foremost medical authorities. The opinions of the psychiatrists, the neurologists and a psychologist varied considerably as to whether Ruby was or was not a "psychomotor epileptic variant." Five said he was and seven said he was not.

The polygraph test results have corrected many errors in other types of evidence readily accepted by the courts. For example, both a $448,000 embezzlement in one company and a $365,000 embezzlement in another were discovered by a polygraph examination, even though regular audits over a period of years failed to detect any shortage. In another case an employee's handwriting was positively identified by a document examiner as that of the forger, but the polygraph examiner cleared that person and later identified another who then confessed the forgery. Eyewitness identification is regularly accepted as evidence, and still hundreds of times the polygraph technique has establsihed the fallacy of such identification.

In reporting these shortcomings, (and they are typical in every field dealing with the examination and observations of a human being) the writer does not imply that any of this testimony should be barred from courtroom use. Despite its inherent weaknesses, this testimony can assist a court or jury in the decision-making function and so also will the opinion of a competent, experienced polygraph examiner.

In 1940 the late Dean Wigmore, a foremost authority in the field of evidence, stated that although perfection in test results is not a prerequisite to the admissibility of evidence obtainable by the use of scientific instruments or techniques, the standard practice has been to grant judicial recognition only after the proponents of the unprecedented evidence have shown that the instrument or technique has a reasonable measure of precision in its indications and that it is an accepted one in the particular profession or field of science to which it belongs. Wigmore, supra.

A more modern view accords judicial recognition upon the general acceptance by specialists within a profession or field of science even though the group as a whole may be completely unfamiliar with the instrument or technique. People v. Williams, 164 Cal. App.2d 858, 331 P.2d 251 (1958). This group of specialists may well be, for the most part, the polygraph examiners themselves. This modern view has not yet been featured in a polygraph case although applied in a case involving the Nalline test for narcotics within the human body. The scientific witnesses in that case testified that even though the witnesses in that case testified

that even though the medical profession as a whole was unfamiliar with the test, its reliability was generally recognized by the relatively few members of the profession who had made a study of the test. In Williams, supra, the court said, "In this age of specialization more should not be required" than general acceptance within the speciality itself.

Foremost legal authorities, including Wigmore, McCormick, Wicker, and Inbau advocate the admission of polygraph test results as court evidence, but admonish the courts that a competent, experienced polygraph examiner should conduct the test and submit himself and his test records for cross-examination.

Future

It is my firm belief that the polygraph will attain an enviable place in the future, both as evidence in court and especially as the most useful and least offensive interrogational and investigative device.

Rather than place a suspect under arrest, it is my suggestion for the future to invite him to take a polygraph test which, by agreement, would be video tape-recorded from beginning to end. If the suspect passes the test regarding the matter under investigation, he would be dismissed immediately and his video tape destroyed after a reasonable time. If the suspect gave deception reactions, he would also be dismissed, but a complete investigation would be made regarding his implication in the crime under investigation.

To further illustrate the substitution of a polygraph test for an immediate arrest, consider this case. A six-year-old girl was kidnapped and murdered. A handkerchief used as a gag was found with a laundry mark identifying a soldier who was then in an army camp. It was learned that the soldier formerly lived in an apartment house near the victim's home and was on leave from service at the time of the crime. When questioned he was unable to account for his whereabouts and could not supply an alibi for the night of the kidnapping. The police were convinced he was the kidnapper but agreed to allow him to take a polygraph test. He passed the test, requiring only 45 minutes, and as a result was dismissed without an arrest. One hundred and sixty-two more suspects were given polygraph tests in that case and then released in the same manner, i.e., without arrest. Six months after the soldier's test, the actual kidnapper-murderer was tested and it was reported that he was not telling the truth. Later he pleaded guilty to the kidnap-murder. By taking the polygraph test the soldier in this case was not placed under arrest and was spared the necessity of spending time in jail. It is possible, based upon the facts in this case linking the soldier to the crime, that he may have been held for trial and conceivably could have been found guilty.

In order to reach the ultimate goal of polygraph achievement, it is necessary that medical and behavioral scientists become intimately interested and involved in its development. Using this scientific talent, with actual criminal case subjects, would provide better laboratory conditions for future development and progress than the simulated type of polygraph experiments of the past in which students were used as subjects.

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RECENT DECISIONS CONCERNING "LIE DETECTOR" EXAMINATIONS

By

John E. Reid

Two murder cases involving the use of "Lie Detector" tests were decided recently by the Wisconsin Supreme Court. The first: State of Wisconsin v. Herman DeHart (8 N.W.2d 360 1943). The defendant voluntarily submitted to a "Lie Detector" examination in Chicago and after the tests, upon further interrogation, admitted to the examiner that he did participate in the murder of an "old shacker" in Oneida County, Wisconsin in 1935. He made and signed a confession incorporating the details as to his part in the robbery-murder of the "old recluse." After receiving a share in the proceeds of the robbery, the defendant travelled throughout several southern states for six years before he returned to Oneida County.

Soon after the murder, investigators learned that the shack was burned to the ground and only the charred remains of the victim were discovered. At the trial the defendant pleaded an alibi stating he was out of the state at the time the murder was committed and retracted his confession alleging it was not voluntarily made. The Supreme Court ruled the confession to be voluntarily given but conceded "there was some evidence that Mr. Reid, who gave the "lie detector' test, used profane language in urging the defendant to tell the truth .... but there is nothing to show that his conversation was coercive in manner or content." The defendant further alleged that he was strapped down during the tests, but the court found no evidence that such was the case and that only the ordinary appliances of the "lie detector" were attached.

[Editor's note: This case is unique because the "lie detector" so clearly indicated guilt even though the test was not made until six years after the crime. Another interesting point not alluded to by the court was the defendant's freehand drawing in the confession as to the position of the victim's body after the shooting. Since the shack was destroyed by fire the freehand drawing in the confession was corroborated by the coroner's report of six years before.]

The second case, Frank B. LeFevre v. State of Wisconsin (8 N.W.2d 288 1943), took a decidedly different turn. The defendant appealed his conviction for murder and states that on two separate occasions he voluntarily submitted to "lie detector" tests and that prior to each of these tests he signed a stipulation drawn by the District Attorney. These identical agreements in part provided: "It is further stipulated and agreed by and between the same Frank LeFevre and S. Richard Heath (District Attorney) that any fact, matter or thing disclosed by said lie detector examination of said Frank LeFevre and the findings thereon, may be admitted in any trial or preliminary examination before any of the courts of the County of Fond du Lac or State of Wisconsin."

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The District Attorney was not satisfied with the results of the first test and two weeks later asked the defendant to submit to another "lie detector" test. The District Attorney was still not satisfied after the second test and the case was tried. The defendant asked that the reports and findings of Professor Matthews and Professor Keeler be admitted as evidence, but the state objected to those parts of the reports containing the findings. The Supreme Court ruled that the testimony of the "lie detector" experts was properly excluded, but the District Attorney's testimony that the tests were favorable to the defendant came in without objection and therefore was significant. The court reviewed the whole record and decided there was not sufficient evidence to find the defendant guilty beyond a reasonable doubt and directed the accused to be released.

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