

JOURNAL OF THE AMERICAN POLYGRAPH ASSOCIATION

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PUBLISHED QUARTERLY

Polygraph 1976, 05(4) P.O. Box 74, Linthicum Heights, Maryland 21090

THE CONTROL QUESTION: A TECHNIQUE FOR

EFFECTIVE INTRODUCTION

By

Stanley Abrams

One of the major contributions to polygraphy in the last fifty years has been John Reid's control questions. He indicated that his motivation for developing this procedure was to reduce the number of inconclusive charts and to apply some form of measuring system that he felt was not available in the relevant-irrelevant technique.¹ In 1947 when Reid² published the first paper on this approach he emphasized that "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." He reenforced this concept later when he wrote "If the subject receives the impression that the question is inconsequential and unimportant the whole purpose of the control will be lost."³ From Reid's statements, it is quite apparent that the value of a relevant question is almost completely dependent upon its control.

Backster⁴ refined the control question and explained its foundation in terms of the principle of psychological set. An individual directs his attention to that aspect of the environment which presents the greatest threat to his well being. The difficulty in applying this definition to the control question, in contrast to the relevant question, is that in the case of the former, this is only an assumed threat. It is assumed, rather than real, because the polygraphist does not inform the examinee of any of the consequences that might result from a lie on the control question being detected. The assumption has been that the unspecified threat associated with deception to the control question has greater threat value for the "innocent" subject than the relevant question to which they are responding truthfully. One must seriously question whether this is true for all individuals, and if it is not, then some non-deceptive subjects will be diagnosed as deceptive.

Backster⁵, while he uses a numerical score of minus nine or more on two charts to indicate deception and plus nine or more to show truthfulness, does feel that there is justification for reducing the cut-off point on the non-deceptive side. This suggests that greater sympathetic arousal occurs when a guilty subject lies to a relevant question than when an innocent person responds deceptively to a control. It would appear then that lying to a control question does not have as much threat value as exists in lying to a relevant question. In order to achieve a greater validity, it is felt to be necessary to increase the threat of the control question. To accomplish this, a somewhat different approach was employed in developing a series of control questions with forty suspects who had had criminal charges brought against them.

Each subject was informed that he would be asked a series of questions unrelated to the charges against him, but which would serve to give the examiner some insight into his character and moral standards. This appeared to reduce the examinee's tendency to admit to the activities of which he was questioned so that control questions were more readily obtained. After the controls were selected, the subject was again asked if he were certain of his answers. When he assured the examiner of this, he placed himself in the positions of finding it more difficult to retract his statements later. The subject was then very clearly told that his truthfulness regarding these statements was every bit as important as was his responding honestly to the crime questions. Any decision made, relating to his truthfulness on the crime question, he was informed, was based on his truthfulness to the controls as well. The subject was led to believe that the controls were as meaningful as the relevant questions and that his final diagnosis would be dependent on his honest response to both the control and relevant questions.

This served to spell out what had only been assumed in the past, that the control questions were real threats to the innocent. Utilized in this manner, the innocent subject's attention was diverted to the controls because he believed that if his deception to this item were detected, it could result in his being labeled "guilty."

After applying this approach in forty examinations, the following observations were made:

- 1. The number of inconclusives and difficult to score charts was reduced because non-deceptive subjects demonstrated much greater reactions to the control questions.
- 2. The employment of this procedure did not appear to negatively influence the deceptive subjects' reactions to the relevant questions.
- 3. Explaining the use of the control question technique to attorneys and the courts when it was employed in this manner was much more meaningful to them. They were better able to comprehend the concept of psychological set and could more readily understand the threat inherent in the control question.
- 4. While it could not be demonstrated statistically, it was felt that a higher degree of validity was achieved in that this approach reduced the likelihood of misdiagnosing a non-deceptive subject.
- 5. The threat associated with the control and relevant questions appeared to be much more equivalent. For the innocent, the relevant question was always a threat, but now the control was even more threatening. He clearly had been informed that a decision related to the charges against him would be determined by his truthfulness to the control questions as well as the relevant.

The threat to the innocent was not related to the content of the control question, stealing, rape, etc, but rather to the fear of being

caught lying. The implication of this is that the examiner does not have to be overly concerned as to the content of the controls for even lying about a very minor issue should induce a considerable sympathetic arousal. Again, this is because the subject has been informed that a judgment of his "guilt" or "innocence" will be based on his truthfulness to the controls. The threat has been spelled out.

The guilty continued to perceive the relevant questions as presenting the greatest threat to their well-being while the innocent were alerted to the controls. In Backster's terms, it caused an "either/or" situation rather than one that could be characterized as "more or less."

Footnotes

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Polygraph 1976, 05(4)

THE DETECTION OF DECEPTION*

By

Leonarde Keeler

History

There are many age-old practices in the Orient for determining innocence or guilt. The Chinese requested suspects to chew rice powder during an interview, then to spit it out for examination - if the rice were dry the suspect was considered guilty because the tension of guilt supposedly caused a cessation of salivary gland secretion. In India the movement of the suspect's big toe is supposed to be indicative of deception. Another test attributed to the Hindus depended on the superstitious beliefs of the natives. The suspects were told that a sacred ass would bray when a guilty subject grasped its tail. The crafty Hindu investigator had dusted the animal's tail with lamp-black previous to the test. Because of the belief in the animal's supernatural powers the guilty suspect, when sent alone into the chamber with the guilt-detecting ass, passed it by without grasping the tail, whereas the innocent subject grasped the tail according to instructions, thereby covering the palm of his hand with the soot. The guilty subject, therefore, came from the chamber with clean hands.

It is interesting that Benvenuto Cellini (1558-1561) records in his autobiography the following observation concerning his father:

"I was ill about two months during which time my father had me most kindly treated and cured, always repeating that it seemed to him a thousand years till I got well again, in order that he might hear me play a little. But when he talked to me of music with his fingers on my pulse, seeing he had some acquaintance with medicine and Latin learning, he felt it change so much if he approached that topic, that he was often dismayed and left my side in tears."

In more recent years psychologists and physiologists have conducted research in the detection of deception.

Munsterberg (1904) advocated restricted use of instruments for recording pulse, blood pressure and respiration.

Marston (1915) tested 200 subjects experimentally, measuring the systolic blood pressure at frequent intervals. His results indicated that systolic pressure constituted an accurate means for detecting deception.

^{*}The article was written in 1936 or earlier. It was subsequently incorporated into the publication <u>Outline of Scientific Criminal Investigation</u>, Ann Arbor, Michigan: Edwards Brothers, 1938. The Outline was prepared as a guide for attorneys attending courses and seminars offered by the Scientific Crime Detection Laboratory of the Northwestern University School of Law.

Benussi (1914) and Burtt (1921) recorded respiration of subjects while lying. They concluded an apparent change in the inspiration-expiration ratio (E/I) was indicative of deception.

Lombroso, Jung, Munsterberg, Crossland, and others advocated the use of a word association test. Under this test a list of stimulus words is read to the subject who has been instructed to respond as quickly as possible with the first word or group of words which comes to his mind. The response and the time interval between the stimulus and the response are noted.

House (1915) experimented with various drugs such as scopalamine, hydrobromide, morphine, and chloroform, which were administered to produce a condition of anesthesia in the subject. Cerebral activity is depressed to a point of unconsciousness. The subject gradually emerges from the influence of the drug and is interrogated as soon as he is able to understand the questions. Inhibitions are removed and due to the depressed consciousness, inventive or creative ability is absent while memory for past events remains intact.

Experiments performed at the S. C. D. L. of Northwestern University have indicated the advisibility of administering scopolamine without morphine and chloroform. In approximately 25 experimental tests the majority of the subjects responded truthfully to all answers. In actual criminal cases the truth has been ascertained in approximately 50% of the cases. Other anaethetics are used as "truth serums". Sodium amytal seems not to be so successful as scopolamine because of the rapid recovery of the subject.

Larson (1921), working under Chief August Vollmer, Police Department of Berkeley, California, used an Erlanger sphygmomanometer in combination with a Pneumograph. Some four hundred suspects brought into the police station were subjected to the test. Larson reports high accuracy of results, but has not treated his material statistically. Since, he has made tests on convicts at Joliet and on others.

At Stanford University (1925) (Psychology Department) and later at Northwestern University, (S.C.D.L.) (1930) a Polygraph was developed eliminating rubber tambours for recording continuously, blood pressure, pulse and respiration. Being added to this are units for recording pulse frequency in an integrated curve, and for recording the psycho-galvanic reflex.

Emotional Factors in Deception

Methods for the detection of deception are based on the fact that various autonomic and voluntary bodily changes accompany deception, particularly when the subject is aware of the examination procedure and purpose of the test.

(1) Although little is known concerning the mental processes involved in deception, the apparent effect is observed in the bodily changes accompanying the emotion of fear - primarily fear of consequences of exposure. Awareness on the part of the guilty subject of the procedure and resultant physiological changes intensifies this fear, thereby further accentuating the accompanying bodily changes.

(2) Often a conscious effort is made to prevent exposure. A subject will frequently attempt to suppress the physical changes and in so doing will effect certain semiautonomic voluntary muscular movements, particularly those of respiration.

(3) If the test procedure is properly controlled, the innocent subject will give no symptoms of fear, or if symptoms of fear exist at the onset of the examination, they will disappear as the examination proceeds. Furthermore, without fear symptoms no conscious effort will be made to control them.

(4) In simple experimental tests where the only consequence of detection is defect in a game, fear may persist as a minor factor but attention to the situation and anticipation resulting in emotional and therefore physical tension followed by relief, will exist as a major factor.

(5) In other situations, the arousing of memories of experiences, either pleasant or unpleasant may produce an emotional tone similar to that existing with the experience itself.

(6) After the disturbing conscious factors have been removed by confession, emotional equilibrium is usually restored.

Physiological Variations that Accompany Emotional States

Changes in blood pressure accompany emotional states. With fear there is an increase in blood pressure and heart rate. Excessive fear may cause shock and a decrease in blood pressure and heart rate (fainting). Accompanying embarrassment there may be a dilation of peripheral vessels and therefore a drop in blood pressure (blushing). The sympathetic and parasympathetic nervous systems have direct influence on contraction and relaxation of arterioles and on the activity of various endocrines (ductless glands) such as thyroid and adrenal bodies and ducted glands (salivary and lacrimal, etc.). Other bodily changes accompanying emotion are: increase in blood-sugar (liberated from liver) decrease in blood-clotting time, decrease or increase of peristaltic movement of stomach and intestines, increase or decrease in activity of sweat glands, (Psycho-galvanic reflex) variation in pupilary diameter and increase or decrease in respiratory rate and amplitude and voluntary muscular reflexes.

Of the above, blood pressure, heart rate, respiration, psycho-galvanic reflexes and voluntary muscular reflexes can be conveniently recorded.

The Polygraph Method

The present apparatus used at the S. C. D. L. consists of three units; one recording continuously and quantitatively the blood pressure and pulse; another giving a duplicate blood pressure pulse curve taken from some other part of subject's body, or may be utilized for recording muscular reflexes of the arm or leg; and the third unit recording respiration. (1) The cardio-sphygmomanometer unit is composed of a blood pressure cuff connected by rubber tubing to a bellows. The metal bellows or tambour stack is mounted in a horizontal position below the panel on sliding runs. It is moved forward or backward (toward or away from the pivot shaft to which is attached the lever arm pen) by means of rack and pinion which is controlled by a convenient knob on the panel. The position of tambour unit in relation to pivot shaft must be changed according to the pressure utilized in the system. (The closed end of tambour unit is kept at constant distance from pivot shaft.) A pressure gauge of the usual dial type (sphygmomanometer) is mounted on the panel and connected through a three-way valve to either of the blood pressure systems, providing a means for determining the actual pressure in either system.

(2) Pneumograph unit: A light rubber tubing supported by a l foot length, 3/4 inch diameter spring with end pieces (one end closed; the other open with tube nipper) constitutes the pneumograph chest tube. This is connected by rubber pressure tubing to a metal bellows unit which is mounted under the panel of apparatus similar to the blood pressure tambour mounting. No pressure gauge is used in this unit.

(3) Kymograph: The chart paper, perforated on its edges, is drawn by a sprocket feeder roll which is driven by a synchronous motor. A differential gear train provides for three constant speeds, (3-6-12 inches per min.). The various physiological changes which vary the pressures in the systems are recorded by means of combined lever arms connected to pivot shafts which are linked to the tambours.

Operation of the Polygraph

The blood pressure cuff is snugly wrapped about the upper arm (preferably the right arm). The pressure system is inflated to a point midway between systolic (maximum) and diastolic (minimum) blood pressure. This point is the mean pressure. When the dicrotic notch appears in the middle of the pulse wave, the pressure in the system equals mean pressure. When the dicrotic notch appears at the top of the wave, the pressure in the system equals diastolic pressure. When the dicrotic notch appears at the base of the pulse wave, pressure in the system equals systolic pressure. These relations of the dicrotic notch position and blood pressure hold only in cases where the subject's pulse frequency is within normal limits. In cases where the subject's pulse rate is over 100 per minute, the dicrotic notch may not vary in position. Greatest pulse amplitude should then be taken as equal to mean blood pressure. When the system has been inflated to a pressure equal to mean blood pressure, valves are closed to prevent leakage. The pressure in the system then remains constant except for variations produced by the subject's pulse and blood pressure. These are recorded continuously for the duration of the test.

The tambour position is adjusted so that tracing is obtained on the lower half of the recording paper.

The pneumograph tube is adjusted about the thorasic or abdominal region (depending on subject's type of breathing) so that it fits snugly but not too tight to interfere with normal respiratory movements. The position of

the tambour is then adjusted so that the tracing is obtained in the middle region of the upper portion of recording paper.

Experimental Test Procedure

The chief factors involved in the experimental procedure are increase and decrease in tension (blood pressure, pulse, and galvanic reflex) and conscious control (respiration). The test procedure is explained to the subject and instructions to remain as quiet as possible are given. In the usual experimental test a "normal" of the subject is obtained, $l\frac{1}{Z} - 2$ minutes depending on extent and frequency of normal variations. The subject is then instructed to answer all questions by "yes" or "no" or to refrain from giving verbal responses.

Types of simple experimental tests:

(This type of test is also valuable in obtaining information in criminal cases).

- (1) Card Test
- (2) Map Test
- (3) Number Test
- (4) Name Test
- (5) Age Test

Procedure: Example (Card Test):

- (1) Test procedure is explained to subject.
- (2) Subject chooses 1 card from a group (8-10 cards convenient).
- (3) Arm cuff and pneumograph are adjusted.
- (4) Apparatus is set into operation.
- (5) "Normal" of subject is obtained.
- (6) Subject is instructed to answer "no" as each card is presented. It must be emphasized that the verbal response to all cards including the chosen one must be "no" so that subject answers truthfully to all cards excepting the chosen one.
- (7) The cards are exhibited to the subject one at a time, ten to twenty seconds apart as the question is asked. "Did you choose the ten of hearts?" "Did you choose the ace of spades?" etc. The graph is marked at the point each question is asked.
- (8) A "normal" of 30 seconds or more is obtained following the last question. The test may be repeated once or twice for verification.
- (9) The cuff pressure is released and appliances removed from subject.

Interpretation of Simple Experimental Deception Polygrams

One or more of the following factors are indicative of point of deception:

[Blood Pressure Pulse]

(1) Peak of tension (highest point on blood pressure curve).

- (2) Decrease in pulse frequency usually followed by slight increase.
- (3) Greatest variation in blood pressure curve, immediately following stimulus.
- (4) General irregularity of blood pressure curve preceding point of deception followed by a smoother curve.
- (5) General gradual rise in B.P. curve following point of deception (rare type of response).

[Respiration]

- (6) Regular normal respiration to point of deception, suppression (decreased amplitude and rate) during period between deception stimulus and next stimulus followed by relief (deeper and more rapid respiration).
- (7) Suppressed respiration during entire period preceding deception stimulus followed by deeper respiration for remainder of test.
- (8) Respiratory blocking (apnoea) at deception stimulus. (Subject stops breathing in expiration for one or more respiratory cycles.)
- (9) Regular respiration preceding and including period following deception stimulus followed by irregular respiration for remainder of test.
- (10) Irregular respiration preceding deception stimulus followed by regular respiration for remainder of test.

[Muscular]

(11) Muscular movement after the stimulus following deception stimulus.

[Psycho-galvanic reflex]

- (12) Decrease in apparent skin resistance up to and including period of deception, followed by increase in resistance (peak of tension).
- (13) Greatest response (apparently change in skin resistance) following stimulus.

Test Procedure In Criminal and Personnel Cases

(1) <u>Peak of Tension Test</u>. Practically the same procedure as an experimental deception test is followed. This test may be used particularly in cases in which pertinent facts are unknown to the suspect. Tests of this type most commonly used are:

- (a) Name test
- (b) Amounts test
- (c) Object test
- (d) Map test
- (e) Age test
- (f) Type of crime test

- (2) Specific Response Test: (relevant and irrelevant questions).
 - (a) Short series test:

Three questions are prepared in advance, the first two irrelevant and the third relevant. Subject is shown the questions previous to the test. The question series is repeated three times before test is concluded. The resultant curve of a guilty subject may indicate peak of tension at relevant question, specific response or combination of both.

(b) Long series test:

Following the recording of subject's "norm" two or three irrelevant questions are asked; then one or two relevant questions followed by another irrelevant question, etc. Eight to twenty or more questions are sometimes asked in a single series. Subject is not informed as to nature of questions previous to test. Following the question series; a short "norm" is obtained.

Peak of tension is not significant in this type of test. Resultant curves contain specific responses to questions in blood pressure, pulse, respiration or galvanic reflex, or a combination of all, when subject is guilty or has guilty knowledge. Always two or more tests should be made before diagnosis is attempted. An innocent subject may give specific responses to questions in the first test, but after discovering the nature of the questions gives smoother curves in the second and succeeding tests. The guilty individual may give relatively slight responses to questions in first test, but become increasingly responsive in the second and succeeding tests.

The nature of the resultant curves depend entirely on the emotionality of the subject, therefore controls must be obtained. Irrelevant questions are asked and separate experimental (<u>e.g.</u>, card test) tests are made for this purpose.

(3) <u>Word Association Test</u>: Tests similar to that mentioned under association tests are given while subject's bodily responses are recorded. A complex reaching consciousness, or a conscious blocking, will cause bodily responses.

(4) <u>Sensory Tests</u>: In detecting malingering it is often important to record visceral responses to physical stimuli. The following tests may be used:

- (a) <u>Pain</u>. The sudden awareness of pain will cause rapid pulse, increased blood pressure, and a marked decrease in skin resistance. In stimulated pain these changes will not occur.
- (b) <u>Blindness</u>. Subject's good eye is blindfolded while innocuous pictures followed by sensual pictures are held before the purported blind eye. If subject responds to certain visual stimuli which would produce an emotional state, vision is obviously intact.

(c) <u>Deafness</u>. The ear tips of a stethoscope are placed in subject's ears. The examiner standing behind the subject whispers into the stethoscope bell, first pinching the tube going to one ear then the other. A few neutral statements are made as controls. Then, some statement which would ordinarily produce an emotional response is made so that it can only be heard in the purported impaired ear. If hearing is intact, a visceral response will be recorded. Later, the same statement is made so that it can be heard only in the good ear. The responses to stimuli of each ear are compared. If hearing in both ears is reported impaired, neutral statements with an occasional emotion producing statement interposed, are asked.

(5) <u>Psychopathic Tests</u>: Psychopathic patients give emotional responses which differ from those of more emotionally stable individuals. The majority of psychopaths exhibit abnormal irregularities in their respiration. Certain types of respiration predominate in certain forms of psychopathia. No definite conclusions have been arrived at, but studies are now in progress.

Reliability of Polygraph Tests

Exact statistics cannot be derived in actual cases because of the impossibility of verifying all test results. However, wherever follow-ups have been made or confessions obtained at the time of the test which were subsequently verified, the test has been found to be extremely reliable. Although accurate statistics of all examinations are not available, samplings of various groups indicate that laboratory experimental tests, the results of which are of no consequence to the person, are correctly analyzed in approximately 75% of the experiments. In personnel cases for banks and department stores, the results of which are of immense importance to the persons, approximately 80% of those giving test-results indicating deception have made confessions later verified, or have otherwise been definitely proved guilty. In criminal cases, approximately 62% of those giving testresults indicating guilt have made verified confessions or otherwise have been proven guilty. In three cases brought to the writer's attention, individuals diagnosed as innocent were later proven guilty, but in no case has an individual been diagnosed guilty who was later definitely proved innocent. In approximately 10% of the cases the test results are of such nature that no definite diagnosis can be made.

Conditions for Polygraph Tests

Because polygraph detection of deception tests depend on the subject's emotional responses to certain stimuli, it is necessary to control the conditions under which they are made. The greatest accuracy is obtained when the suspect has not been given all of the details of the crime. If a polygraph test is anticipated for a given suspect or witness, the investigating officials should withhold from all suspects, witnesses, and the public as many details as possible. Under these conditions certain tests may be given which will prove extremely reliable in determining the innocence or guilt of the suspect. For example, in a certain burglary case four diamond rings, two watches (Waltham and Elgin) and a ruby breast pin were taken. The burglar dined himself from the ice box, eating some raspberry pie and drinking a glass of milk. Except for the victims and the police, the only person who knew the description of the stolen property and of the food consumed was, of course, the burglar himself.

Three suspects were brought in for polygraph examinations. None were told of what they were suspected. The first test consisted of the following questions which were read to the suspect before the actual test was made.

1. Within the last two days did you steal an auto?

2. Within the last two days did you steal a bicycle?

3. Within the last two days did you holdup someone?

4. Within the last two days did you burglarize a house?

5. Within the last two days did you pass a bad check?

6. Within the last two days did you rob a bank?

Two suspects gave no specific responses to pertinent questions. The other, who later confessed, gave specific responses to not only questions about the burglary, but to those describing the stolen jewelry and the consumed pie.

If the subject being tested is guilty of the burglary he will respond in blood pressure and respiration to the question about burglary. The same test is repeated twice to insure the elimination of accidental responses. Because the peak of tension appears at the burglary question it does not necessarily indicate the suspect's guilt of the particular burglary. However, if in another test during which questions about different types of jewelry are asked the subject responds specifically to questions pertaining to the stolen jewelry, indications of his guilt become stronger. If, in yet another test during which ten types of food are mentioned as having been eaten at the time of the burglary, the subject responds to pie and milk the operator can safely make a diagnosis of guilt in the particular case. The innocent suspects could not respond specifically to each one of the pertinent factors, burglary, particularly pieces of jewelry and pie, but the guilty individual having this information will usually respond specifically, indicating his knowledge of these facts. This particular procedure (peak of tension test) is only reliable when the facts mentioned in the tests have not been divulged directly by the investigators or through the press.

Other polygraph procedures may be followed in cases where all information has been divulged to the suspect, and although helpful in making an investigation, are not so reliable as those tests in which undivulged facts may be incorporated into series of questions. Because of the influence of environmental factors on the test results it is desirable, whenever possible, to have the suspect brought to the university laboratory for the test. Although the tests can be made in any quiet room the results have proved more uniform in those cases in which the suspects have been examined under the ideal conditions afforded at the laboratory. Whenever tests are made elsewhere, the operator should be permitted to work with the suspect in a quiet room, out of the presence of any other person or persons.

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EFFECT OF MENSES ON POLYGRAPH EXAMINATIONS

A PILOT STUDY

By

Bob R. Frisby

This study was authorized by and conducted at the Department of Police Science and Administration, Washington State University, Pullman, Washington, in the first semester of 1960-61. Researchers were David Whiteman and Jerry Jackson, both seniors in the Department, directed and assisted by the writer, then a graduate student (under auspices of Air Force Institute of Technology) and instructor in polygraph classes in the department. Additional assistance on specific problems was rendered by Drs. Francis A. Young and Frederick L. Marcuse, Professors of Psychology; Dr. Harry Zion, Director of the Student Health Service, and Dr. V. A. Leonard, Professor of Police Science and Administration.

The Problem

The author's class notes from the Army Lie Detector Examiner's course, at Ft. Gordon, Georgia, indicated that females in climacteric, or menopause, were considered as unsatisfactory subjects for polygraph examination. Basic reasons given for their unsuitability were actual or unconscious pain, depression, mental vagaries, and generally poor emotional tone. All of these phenomena, including involutional melancholia, the concomitant emotional malady of menopause, had also been observed in actual polygraph examinations conducted by the writer. In addition to inhibiting accurate interpretations of polygraph charts, the menopause effects also adversely affected the important pre-testing or conditioning phase of polygraph examinations, because of the subject's distraction from the situation at hand and preoccupation with her psycho-physiological problem. The writer had also occasionally noted erratic polygraph patterns in other females who were far below the normal menopausal age, and suspected that the interference was caused by effects of the premenstruum, menstruation, drugs designed to

This study was written by Col. Bob R. Frisby, USAF (Ret) for the Armed Forces Staff College in 1965. The research was conducted in 1960-1961 at Washington State University. Col. Frisby is a former examiner and was a member of the Academy for Scientific Interrogation (an APA predecessor). He has a B.A. from Baylor University and an M.A. from Washington State University. He is now a security consultant at 11804 Brookwood Road, Austin, Texas 78750.

Editors Note: Research on the effect of the menstrual cycle on polygraph examinations is currently being conducted at the University of Baltimore under the direction of Dr. William Wagman, Chairman of the Department of Psychology and Dr. Althea M. I. Wagman, Chairman of the Department of Psychophysiology, Maryland Psychiatric Research Center.

relieve menstrual problems, or combinations of the same. In attempting to prepare a block of instruction concerning psycho-physiological problems affecting polygraph examination, more information relating to effect of mense and premenstruum was sought. The study was conceived as a research project for selected advanced students, and designed to determine whether mense (and premenstruum) was detectable by the polygraph instrument and technique. The study was subsequently approved by the Police Science and Administration Department as a pilot study.

Control Factors

It was considered critical to the objectivity of the study that the subjects used in the experiment not be made aware of the real objectives of the study. This was based partly on the supposition that modesty would preclude obtaining participants, were the objectives known; and partly due to the supposition that through inadvertences, the subjects themselves might compromise the study's objectivity, also necessary to give every possible consideration to the privacy of the subjects. To this end, an equal number of male and female students were advised in general terms that the study was aimed at the solution of certain semantic problems affecting polygraph examinations to prevent females being pinpointed as the objects of study. Examination results of the male students were not evaluated in this study, but were used in a later experiment. The sixteen females who volunteered were single, ranged in age from eighteen to twenty-one, caucasians, students of Police Science classes, and resided in campus living groups. At the end of a nine week examining period, a questionnaire was sent each of the females, from, and to be returned to Dr. Zion at the Student Health Service. To allay any suspicion that might be generated in the subjects, a number of other females residing in the same living groups were sent identical questionnaires. The questionnaires were intentionally lengthy and covered all phases of the subject's health. They had certain questions "buried" within them which asked for the exact dates of the subjects' last three menses, their duration and the degree of discomfort experienced. Dr. Zion alone was to see the questionnaires, and was provided the polygraph results completed by the examiners, for comparison and analysis.

Experimental Methods

Whiteman and Jackson, working independently, examined each subject every fifth day for a period of nine consecutive weeks. They worked in sound-resistant rooms, using polygraph instruments which measured changes in the subjects' blood pressure and pulse (cardiograph), respiration (pneumograph) and skin resistance (galvanograph). These instruments, known as Stoelting "Deceptographs", were the same instruments in wide use by federal agencies, including military (designation: AN-USS 2b) agencies, and differ from those in current use only in convenience items and packaging.

Prior to instrumental examination, the subjects were given a normal pre-test or conditioning examination. An essential element of this examination phase includes that the examiner inquire, in general terms, into the state of the subject's present and past physical condition, present comfort, use of medications, etc. Since this is standard practice among polygraph examiners, Whiteman and Jackson were to make no specific mention of mense or functional female problems at any time.

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Verbalization of instrumental testing rendered during the examinations was accomplished by means of tape-recorded questions, and each subject was questioned by this means in each examination. It was expected that this would obviate any possible deviation from the subject's normal patterns which might be otherwise caused by unintended inflections, tones, or improper voice modulation by the examiners. While these are always factors to be reckoned with in any polygraph examination, it was deemed important that special precautions be taken to enhance the experimental objectivity.

Whiteman and Jackson were enjoined not to attempt interpretation of the charts on a day-to-day basis, but to wait until completion of the experiment, when all charts generated by each subject could be assembled. At that time, Whiteman and Jackson, unassisted by the writer or anyone else, were to attempt to select the date or dates during the nine-week period when each subject's emotionality was most heightened, as evidenced by gross disturbance noted in their polygraph charts. The criteria used for these chart interpretations (Appendix A) were those customarily utilized by practicing polygraph examiners in assessing a subject's innocence or guilt. After a thorough review of all the polygraph charts produced during the examinations, Whiteman and Jackson selected two dates for each of the females, which in their opinions were the dates of greatest physical and emotional disturbance for each subject during the nine week period, and which presumably were manifestations of premenstruum or mense. These dates were presented to Dr. Zion. Because of illnesses, conflicting schedules, missed appointments and failure of one subject to submit a completed questionnaire, the results of examinations of only thirteen of the sixteen original subjects were used in the final evaluations. Dr. Zion believed that the thirteen questionnaires received were accurate mense histories, valid for our experimental purposes.

Results and Measurements

Dr. Zion reported that of the twenty-six dates selected by Whiteman and Jackson, seventeen were correct and nine incorrect. Seven of the thirteen subjects' menses were selected correctly on both dates of the month and three were incorrect on both dates. It was further noted that the latter three reported the intensity of their menses to be "slight." Adjective descriptions supplied by the subjects to describe their discomfort were "severe", "moderate", "slight", and "none", and one subject left that portion of the questionnaire blank. Only three subjects described their discomfort as "severe", seven considered their discomfort to be "slight", and other replies as aforecited were given by one subject each. Whiteman and Jackson were completely effective in their selection of the three subjects who described discomfort as "severe". One error was caused by the examiner's expectation that the subjects would have only two menses in nine weeks, (based on the "normal" twenty-eight day cycle), whereas one of the subjects had three; one at the beginning, one in the middle, and one at the end of the nine-week testing period. The possibility of Whiteman and Jackson's selections being the result of pure chance was statistically tested by application of the x^2 (Chi square) method to the problem. This application was based on the null hypothesis that the emotional responses (or simulated guilt responses) in these subjects should be no more significant during premenstruum or mense than during the balance of the ovarian cycle. In this

sample, as tested, the null hypothesis is rejected; the difference that resulted could occur much less than five times out of one hundred attempts if left to chance alone. Therefore, chance must be ruled out as an explanation. It should also be noted in this connection that not once in the 192 examinations conducted did any of the subjects acknowledge that they were menstruating or in premenstruum, in response to questions relating to their health; so Whiteman and Jackson's selections were free from that particular bias.

Discussion of Results:

While the sample used was relatively small and lacked universality of application, <u>i.e.</u>, wider age ranges, racial mixtures, differing marital statuses and histories of pregnancies, etc., it is obvious that the results were sufficiently pronounced that a practicing polygraph examiner should take note of a possible hidden variable. This variable could cause serious error, with unfortunate consequences to the erring examiner and to the art of polygraph examination in general.

The complete failure of the experimental subjects to mention functional problems in response to examiner's queries about their health is also significant. This omission could have been caused by embarrassment, belief that their functional problems were not intended in the scope of the examiner's questions, or due simply to their regarding functional problems as a natural phenomenon of no consequence to the outcome of the examination. Their lack of response to a practicing examiner in an actual case would have deprived him of data which would assist him in chart interpretation, or in prompting him to discard the charts as diagnostically worthless and to reschedule the subject for examination on a more propitious date. Whiteman and Jackson observed fidgeting and decreased tolerance to the discomfort of the instrument's blood pressure cuff in some of the subjects at times of the suspected menses. These manifestations did not appear in the same subjects at other times, suggesting at least malaise and a lowered pain (or discomfort) tolerance in mense, both of which inhibit competent polygraph examination and chart interpretation.

In several of the subjects, a curious wave-like cardiographic pattern was formed in the charts produced during the suspected mense, suggestive of a throbbing or pulsating discomfort. This pattern was not present in other charts produced in examination of the same subjects at other times. Other than this, Whiteman and Jackson did not observe any more significance in any one of the three tracings than in another, and disturbances noted in making their ultimate selections were generalized throughout the charts.

Unfortunately, since the limitations imposed on this particular study did not permit correlation of individual examinations with actual mense data, one can only speculate that these particular examiner observations were related to actual menstrual or premenstrual problems.

Conclusions

If student examiners can achieve such relatively accurate results

in selecting dates of mense-premenstruum from a group of females, over half of whom describe their discomfort as "slight", a real problem exists. The scope of the problem, however, is considerably obscured by the size and randomization of the group tested, and the inability to exploit correlation of results with actual case histories. It is believed that such correlation would explain any existing error factor.

Examiners, who generally have female observers present when examining other females, may have their observer privately ask female subjects direct questions about their menstrual cycle, since it has been demonstrated that female subjects will not always volunteer this important data. The question should fix the date of last mense, normal mense duration and intensity of the mense, as a minimum. On receiving this information the examiner should govern himself accordingly, and at least consider this data in chart interpretation.

APPENDIX A

CRITERIA USED FOR CHART INTERPRETATION BY POLYGRAPH EXAMINERS

Cardiographic Tracings

Blood pressure gain Blood pressure loss Vagus suppression at stimulus Pulse decrease Pulse increase Wavering blood pressure at stimulus Extrasystoles, when a pattern is formed in relation to stimuli Decrease in amplitude Increase in amplitude Change in dicrotic notch

Pneumographic Tracings

Change in inspiration - expiration ratio Loss of baseline Change of baseline Hyperventilation Suppression Blocking or apnoea Increase of amplitude Decrease of amplitude

Varying amplitude from stimulus

Staircase effect

Notched or serrated inhalation tracing or exhalation at stimulus, when not noted throughout charts.

Galvanographic Tracings

Abrupt rise at the point of stimulus

Prolonged reaction

"Double-saddle" response

General change in Galvanographic activity, either in conjunction with or not included in the other criteria.

APPENDIX B

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* * * * * *

WHAT EMPLOYERS WANT TO KNOW

By

M. A. Hardin

Introduction

This study was conducted on a national basis with special care taken to achieve a representative sample of personnel executives. The results show that personnel executives, like most other professional groups, agree on the importance of issues, but do have divergent answers on how to resolve the issues.

As the summary indicates, most personnel executives believe a prospective employee should be screened for ability, character, and health. How to do this breaks into two schools of thought: (1) Use an internal staff which understands the needs of the organization and (2) Use an outside agency which professionalizes the investigation and has sources which staff personnel do not.

Sources of the Data

Respondents to the survey represent a variety of business interests and geography. They are classified as follows:

Area of Country	
Northeast	22%
North Central	34%
South	20%
West	24%

Type of Business	
Manufacturing	37%
Transporation	13%
Wholesale/Retail Trade	11%
Financial/Banking/Brokers	19%
Insurance	10%
Services	8%
Other	2%
Other	2%

Based on a survey for Equifax (formerly Retail Credit Company). The author is Manager of Research Design in Marketing Information Service, Atlanta, Georgia. The survey, conducted in October 1975, is based on replies from 340 personnel directors throughout the United States.

Number of Establishments		
One	23%	
2 - 5	28%	
6 - 15	18%	
16 - 50	17%	
Over 50	14%	

Number of Employees

Under 500	37%
500 - 1,000	18%
1,000 - 2,500	19%
Over 2,500	26%

What Employers Want to Know

Personnel executives rated items of information developed on prospective employees using a 0 to 10 scale, with 0 being not at all important and 10 being extremely important. Generally, a scale of 0 to 10 may be interpreted as follows:

0 to 3.99	Definitely unimportant
4.0 to 4.99	Slightly unimportant
5.0 to 5.99	Slightly important
6.0 to 7.99	Important
8.0 to 9.99	Extremely important

Ranked Elements of Screening Information

	Average Rating
Former Employment Records	8.04
Specific Information on Honesty and Integrity	6.47
Health History	6.38
Specific Information on Character/Personal Reputation	6.23
Specific Information on Use of Alcohol and Drugs	6.10
Personal References' Evaluation of Job Skills	5.97
Criminal Court Records	5.28
Personal Reference's Evaluation of Character/Reputation/Morals	5.12
Police Records	4.97
School Records	4.84
Credit Records	4.21
Specifics on Outside Activities and Interests	4.03
Civil Court Records	3.73
Neighbor's Evaluation of Character/Personal Reputation	2.34
Neighbor's Evaluation of Home and Family Environment	2.28

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As can be seen from the above table, Former Employment Records are of paramount importance in evaluating prospective employees. Respondents rated this element high whether or not they rated other elements high.

A correlation analysis reveals that the second most important area consists of three separate but related elements.

Specific information on honesty and integrity

Specific information on character and personal reputation

Specific information on use of alcohol and/or drugs

Personnel directors feel this information must be developed, and it must be specific.

The three information areas indicated below are also considered important but to a smaller degree:

Health history Personal references as relate to job skills Criminal court records

The remaining information areas were regarded as "slightly unimportant" to "definitely unimportant" in the applicant screening process.

How Employers Screen Prospective Employees

The table below indicates the percentage of firms using various screening methods by specific types of employees. As can be readily seen, prospective managers are screening much more thoroughly than other types of employees. A structured interview is utilized by two out of three companies for management prospects.

Of the next two categories, salesmen and professional/technical, professional/technical people are screened slightly more thoroughly than salesmen. This is most likely due to a widely held belief that professional/ technical people may be evaluated in a more objective manner than salesmen whose basic skills of communication and persuasion are more subjective than technical accomplishments.

When screening clerical prospects, the use of written tests markedly increases in relation to other classes of employees. The use of structured interviews and internal staff checking of application data remains about the same as with higher paid classes of employees.

When screening plant/production people, employers significantly decrease their screening efforts to all levels. Still, over half of personnel executives check previous employers and one-third conduct a structured interview of the prospect.

The use of polygraph is negligible for all classes of employees. Outside reports are used most frequently in screening managers, salesmen, and pro-fessional/technical people.

	Manager	Salesman	Prof/ <u>Tech</u>	Clerical	Plant/ Prod.
Written Tests	13.0%	10.8%	16.0%	33.0%	7•4%
Polygraph	2.2%	1.9%	2.8%	2.8%	1 .2%
Structured Interview	67.3%	48.1%	55.6%	57.1%	34•9%
Staff Checking of:					
Previous Employers	88.3%	67.6%	81.5%	85.5%	56.8%
References	75.0%	54•9%	65.4%	63.0%	41.7%
School Records	51.5%	34.6%	48.8%	45.7%	26.2%
Use of Outside Reports	35.5%	22.8%	24.4%	14.8%	4.9%

Tests Used in Screening Various Employee Groups

How Far Back to Screen a Prospect

There was overall agreement between personnel executives that five years of history should be covered when screening a prospective employee. Another frequently answered time period was nine years or more as can be seen in the table below:

Depth of Coverage

Average	6.0
Under 5 years	17.0
5 years	28.7
6-8 years	10.5
9 years or more	17.6
Non-numeric response	19.4
No answer	6.8
Total	100.0

Roughly, one out of five respondents answered this question in a nonnumeric way, such as "one-fourth of a lifetime", "depends upon the age of the applicant", etc. There was no discernable pattern to these replies. The most that can be said about these replies is that this type of respondent is looking for an intelligent appraisal of individual situation without using standard procedures to answer a question.

Conditional Hiring

Two-thirds of personnel executives use a conditional hiring procedure. It appears that most employees recognize that the screening process may stretch out over a protracted period of time. This allows the prospective employee to begin work to satisfy an immediate need while still reserving the right not to hire on a permanent basis until enough information is received to make a final judgement.

The following table summarizes conditional hiring and illustrates that employers are quite willing to hire on a conditional basis:

Hire conditionally for 6 weeks or less	22.2
Hire conditionally for over 6 weeks	39•9
Total who hire conditionally	62.1
Total who do not hire conditionally	37•9
Total	100.0

The Cost of Hiring a New Employee

Personnel executives were also asked to estimate an average cost of employing a new person. The following were some of the factors to be considered in computing this average cost:

> Agency Fees Advertising Interviewing Time Testing Medical Exams Reference Checks Unproductive Time Training Time Extra Supervision

The table below presents the average cost of hiring a new employee:

	Average
Managers/Prof/Tech	\$3 , 197
Sales Personnel	2,234
Clerical Personnel	1,061
Plant/Production	672

As might be expected, clerical and production employees are not perceived as generating a large expense in the hiring procedure. Most likely, this is due to the fact that these employees are performing non-judgemental, repetitive operations which can normally be easily learned. Consequently, the training period is minimal and the screening process is less costly.

On the other hand, management, professional/technical, and sales personnel are several times more expensive to hire and train. Even here, though, the actual cost may be understated. This may be especially true when consideration is given to the fact that the first month of employment for such a person will be largely spent in orientation.

Summary of Findings

Personnel Managers want to know specific information about prospective employees. In order of priority, you want to know about:

- . Prior work record
- . Honesty and integrity
- . Character and personal reputation
- . Use of alcohol and/or drugs
- . Health history
- . Special training or skills

The most common method of determining this is to have your own staff check references given during the pre-employment interview. Very often, outside reporting agencies will be used on higher level job openings for more in-depth coverage. Polygraphs and other technically orientated screening devices are used very rarely.

The cost of hiring an employee is a significant expense. In some cases, the cost of hiring a manager is well over \$10,000. The average costs of hiring a new employee are:

Managers/Professionals	\$3, 197
Salesmen	2,234
Clerical Personnel	1,061
Plant/Production	672

* * * * * *

ARBITRATION DECISIONS AND THE POLYGRAPH

Two recent arbitration reports have been received which involve the polygraph. In the Monarch Rubber Company case the arbitrator supported the company's use of the polygraph in investigating serious and repeated sabotage, and their suspension of employees who refused to take the examination.

In the Exhibitors Film Delivery case the arbitrator said he "would give little weight to polygraph tests and even less to PSE." The company introduced polygraph results indicating that three employees were deceptive in denying thefts. The unions countered with PSE reports which said their members were not deceptive. The arbitrator believed the eyewitness to the thefts was sincere but not accurate. He reinstated the employees but did not grant back pay because the employees "obviously knew more than they would admit."

* * * * * *

In the Matter of Arbitration Between	,
Monarch Rubber Company, Inc.	,
Spencer, West Virginia	OPINION
and	AND
Laborers International Union of North America. ALF-CIO:	AWARD
Local Union No. 778	,
AAA Arb. Case No. 55-30-0063-75	,
October 23, 1975	, <u>1</u>
-	

ARBITRATOR:

Thomas J. McDermott was selected as arbitrator for this case from a panel provided by the American Arbitration Association.

APPEARANCES:

The hearing for this arbitration was conducted in Charleston, West Virginia on July 23, 1975. The filing of post hearing briefs was completed

^{*}The Editor wishes to thank APA Members Richard D. Patterson of San Francisco and Bill Freeman of Kansas City, and the law firm of Blackwell, Sanders, Matheny, Weary, and Lombardi, also of Kansas City for these law reports.

on October 15, 1975. At the hearing the representatives for the parties were as follows:

For the Company

William J. Rosenthal, Esq. Shawe & Rosenthal Robert A. Schwaber Ewell Greathouse Glennis Ash Charles Ellis Kenny Nichols Edw. Church

Attorney Vice President Plant Manager 2nd Shift Supervisor Maintenance Supervisor Supervisor Supervisor

For the Union

Stephen P. Swisher, Esq. McIntyre & Swisher Attorney Teddy West President, Local #778 Vice President Larry Peffer John Fields Member Executive Board William Rhodes Grievant James Freeland Grievant Elza Westfall Grievant Grievant Lorne Wagoner

THE GRIEVANCE:

The grievance that gave rise to this arbitration was filed on September 20, 1974 on behalf of ten grievants. It states the following:

The Company has suspended 10 men for refusing to take a lie detector test. This is illegal and the Union requests the Company to bring these men back with back pay.

BACKGROUND

The Company operates a plant in Spencer, West Virginia that manufactures sole and heel material for use in the shoe industry. The material is compounded from a mix of synthetic rubber and plastic materials with chemicals. The process begins with a Bambury mixer, which is located in a two-story section of the factory, where there is also stored all of the raw materials. The employees who work this mixer are located on the second floor. The remainder of the plant is a one-story building.

The various materials are mixed in the Bambury mixer, and from there the mix drops to a conveyor that takes it through one of several mills and thence to a warm-up machine. After being heated, it moves through an extruder and calendar mill, and it is then ready to be pressed and cured. From there it goes to a buffing room, where it is made smooth. The final operation is to split the sheets of material to the thickness of the soles or heels called for on the order.

Sometime in July, 1974 the Plant Manager was informed that a batch of material was contaminated with various pieces of metal. Following this incident the Company began to get one batch of materials after another that were contaminated. The contaminants were not of a normal variety, but they included rivets, pieces of steel, nuts, bolts, hack saw blades, washers and even cutting knives. They were the kind of things that had to be deliberately thrown into the mix. Before it was to end, 36,000 pounds of material were so badly contaminated it had to be destroyed, and over 30,000 sheets had to be sold as salvage. Total damages caused by the acts of sabotage were in excess of \$300,000. In addition, there ensued a substantial loss of goodwill and sales, as a number of sheets were not discovered before being shipped to customers. There were 60 returns amounting to \$93,000 worth of materials that were sent back by customers.

The Plant Manager instituted an investigation. Employees were questioned, supervisors were alerted to watch for attempts to contaminate, and some even hid themselves in various locations, but no firm evidence was found that would point to the perpetrators of the sabotaging activities. Out of its investigations, the Company received the names of ten to fifteen individuals as suspects, but the only evidence they had involving them was of a hearsay nature. In addition, the Company reported the sabotaging to the State Police, but they discovered nothing.

Following the uncovering of the sabotaging activities the Plant Manager notified Mr. Robert A. Schwaber, Vice President in charge of operations, and whose office is located in Baltimore, His initial instructions were that the shift should be shut down, and the employees sent home, when a contaminated batch was discovered. Those instructions were followed, but the sabotaging of materials continued. Later he directed that the plant

be shut down for three days, if it occurred again. It did, and the plant was shut down for three days, but the sabotaging did not stop.

Besides the contamination of the materials there were other incidents that occurred. On August 12th someone set off two firecrackers on the roof of the Foreman's office in the plant. The explosion was of sufficient force that it blew a hole through the ceiling. The following night a firecracker was thrown into the bed of a truck parked inside the plant, and caused materials in that truck to catch fire. At another time all four of the mills in the plant were shut down at the same time. It was a deliberate action, as two safety switches had to be thrown, and there was no reason for the mills to be shut down. Another act of sabotage during this period of time was the putting of a very large nut and bolt into a press mold. Extensive damage was done to the mold, and it required costly repairs.

Mr. Greathouse, the Plant Manager, met with representatives of Local Union No. 778 on August 15th. Those officers advised that they would do everything that they could to stop the sabotage. Also, the Vice President, Mr. Schwaber, contacted Mr. Kirker, the Union Representative, who services Local Union 778 for the Laborers' District Council. He was advised that the plant was in danger of having to be shut down. That official promised that he would do everything he could to help.

With the sabotaging continuing the Vice President met with the Chairman of the Board of Directors and the Company's Attorney to discuss the problem. At that meeting the Chairman of the Board stated that the plant should be shut down. Mr. Rosenthal, the Company's Attorney, proposed the use of a polygraph test for a selected list of employees, which would include the persons whose names they had received as suspects.

Attorney Rosenthal contacted an International Union officer and advised him of the problem and that the alternative to the use of the polygraph was to shut down the plant. He further advised that no employee would be discharged as a result of taking the polygraph test, but that if a person confessed to the sabotaging, it would be turned over to the police.

Mr. Rosenthal also contacted District Representative Kirker and gave him the same message. In addition, he told him that if an employee refused to take the test he would be suspended. Mr. Kirker's reply was that he did not like lie detector tests, that the International did not endorse the use of such tests, but that the situation was grave and the life of

the bargaining unit was at stake so that he could understand.

A meeting was arranged for September 4th between Mr. Kirker and five Local Union representatives and Mr. Schwaber and three Company representatives. At that meeting Mr. Schwaber told those in attendance of the Company plans to have polygraph tests given. Details as to when and how the tests were to be given were discussed. The Union was told that no one would be discharged as a result of taking the tests, but that if anyone refused to take the test he would be suspended.

The Union representatives expressed opposition to the sabotaging, and they expressed a wish to get the matter over with. When asked if they had any recommendations on how the sabotaging might be stopped, no suggestions were offered. All but one of the Local's officers stated that they thought it was a good idea to give the tests, and Mr. Kirker's position was the same as he had expressed to Mr. Rosenthal.

The next day there was another act of sabotage on the first shift. Management then directed that the plant be shut down for a week. The Company then contacted the Crosen Detective Agency in Charleston, West Virginia to give the polygraph tests. Arrangements were made for 30 persons to take the tests. The persons selected were from various sections of the plant, with most coming from the Bambury Mixer area and from Maintenance. Also some supervisors were included, because at the September 4th meeting some Union representatives stated that they suspected some supervisors.

The tests were scheduled to be given on September 9th and 10th, and the employees on the selected list were contacted and advised when and where they would be given the test. Ten of the employees, who were scheduled for the tests, refused to take them. When they reported for work the first day after the shut-down, each was told by Supervision that he was being placed on suspension, but that he would be reinstated if he took the test. The ten became signators to the grievance. At a later date two of them, employees Fields and Alvis, decided to take the tests, and they were reinstated. Since the giving of the tests and suspensions all acts of sabotage ceased.

The grievance was filed on September 20, 1974, and with the inability of the parties to resolve the matter it was pursued to this arbitration. On October 3, 1974 the Local Union filed an unfair labor practice

charge against the Company in which the basis of the charge was set forth as follows:

The Employees, without just cause and in violation of the terms and provisions of the contract, discharged from their employment on September 12, 1974, the following named employees because of their failure to submit to a polygraph (lie-detector examination) in connection with an investigation being conducted regarding damage to certain company property.

The Company acted in a discriminatory nature and the choice of persons to submit to said examination.

An investigation of the charge was instituted by the Cincinnati regional office of the N.L.R.B., and on December 2, 1974, the Union's Attorney was notified of the Regional Director's refusal to issue a Complaint. The basis for this refusal was given as follows:

The evidence revealed that the Employer's request that certain employees submit to a lie detector test to determine who was responsible for sabotage of the Employer's production process, and the subsequent suspension of employees who refused to submit to such test, was not in violation of the Act. Where the Employer requires, as here, employees to submit to a lie detector test for legitimate business considerations, individual employees' refusal to submit to the lie detector test does not constitute protected activity.

DISCUSSION AND FINDINGS

On the basis of the N.L.R.B. action the Company Counsel moved that the grievance should be dismissed under the doctrine of equitable estoppal. It is the Company's contention that the Union's claims in this matter were fully investigated and disposed of by the N.L.R.B. Those charges, the Company states, are the same as are being raised in this arbitration. There-fore, the Union should be equitably estopped from relitigating the same issue in this forum.

This request must be denied. The finding of the Regional Director of the N.L.R.B. directed itself at whether or not the indefinite suspension of the employees constituted an unfair labor practice under the Act. The finding that was made was that the refusal of the employees to submit to the lie detector test was not a protected activity, where the need for giving the test was tied to a legitimate business consideration. It was not a determination of whether or not there existed just cause for the indefinite

suspension of the Grievants, as provided for in Article IV, the Management Rights provision in the agreement.

On the Merits:

With respect to the merits of this case, there is no question that the vast majority of arbitrators will hold that the results of lie detector tests should not be construed as evidence of guilt. At the annual meeting of the National Academy of Arbitrators in Puerto Rico in 1966, tri-partite committees from the Chicago and West Coast regions considered the question of the admission of evidence resulting from lie detector tests. Both Committees held that such evidence should be flatly rejected by an arbitrator with or without an objection being made.¹ In his post-hearing brief Union Counsel has thoroughly discussed the question of the admission of evidence resulting from polygraph tests, and has cited a long list of decisions where the arbitrators refused to give probative value to evidence resulting from lie detector tests.

However, this general position does not mean that under no circumstances will evidence resulting from polygraph tests be given any probative value at all. Instead, when offered in conjunction with other evidence, results from lie detector tests may be given, and has been given, some probative value.²

Also, a great many arbitrators have carried the exclusion of evidence concept further by holding that if such evidence is inadmissable, then the refusal to take a lie detector test does not constitute insubordination.³ Again, however, this position is not at all unanimous. Arbitrator Klamon took the position that the refusal to take such a test does not indicate guilt or innocence in any way. However, "it does indicate a complete failure to respond affirmatively to requests that appear to us to be reasonable to cooperate with the Company in its efforts to find out who was responsible

Dallas L. Jones, Ed. <u>Problems of Proof in Arbitration</u>, Proceedings of the 19th Annual Meeting, National Academy of Arbitrators. (Wash., D.C., BNA, 1967), pp. 108, 204.

²See <u>Bowman Transportation</u>, <u>Inc.</u> 74-2 ARB 8717, Arbitrator Ralph C. Hon for his research indicating this point.

³One of the many cases is <u>Town and Country Food Company</u>, 39 LA 332, Daniel E. Lewis.

for what happened.4

Arbitrator James P. Whyte stated that the use of polygraph tests was a reasonable aspect of a Company's right to investigate property losses. "If Company has the right to investigate property losses, it has the right to use investigative techniques which are not illegal and not prohibited by the labor agreement. No evidence was introduced to show the use of the polygraph is contrary to law and the contract does not prohibit its use."⁵

Arbitrator Ralph C. Hon cites several sources, both in arbitration and in the Courts, to indicate that the use of the polygraph is gaining increasing acceptability as "an adjunct to justice" and as an investigative tool. 6

In this case the issue is not whether the refusal of the Grievants to take the test is a presumption of their guilt for the sabotage acts. Therefore, the question of whether the tests were properly given or if the results of the tests could be considered valid is of no relevance. Instead, the issue is whether the Company, when faced with continuing acts of sabotage that were endangering the existence of the plant, as a part of its investigation, had the right to require employees to take the test, and when such request was refused by employees, to suspend them until they would do so.

The evidence indicates that this was not an ordinary incident of sabotage, but that it was a sustained and continuous series of incidents that, if unchecked, would have soon led to the shutdown of the plant and the loss of employment to a great many persons. Furthermore, the Company made various attempts to determine which individuals were responsible for the acts of sabotage, but they were unsuccessful. The matter was reported to the police, who also were unable to assist. Consideration was given to the employment of private detectives, but it was rejected on the very reasonable grounds that because of the geographic isolation of the plant and the close knit nature of the community such action would be worthless.

⁴<u>Allen Industries, Inc</u>. 26 LA 263 @ p. 367.

⁵Bowman Transporation, Inc., 73-2 ARB 8336 at p. 4243. ⁶74-2 ARB 8717.

The Company also enlisted the aid of the Local Union officers, who were sympathetic to the Company, but who could offer no assistance nor propose any program for apprehending the person or persons responsible, or to bring to acts of sabotage to a halt.

With the failure to bring an end to the sabotage, the Company finally settled on the use of the polygraph tests as a final measure. The International Union, the District Representative and the Local Union Officers were all consulted regarding the Company's plan, and were given the opportunity to propose alternative measures, which they could not do. All but one of the Local's Officers endorsed the plan, and while District Representative Kirker did not give outright approval to the use of the tests, his statement that the life of the bargaining unit was at stake and that he could understand, indicated a degree of tacit approval.

The Company also made clear to the Union that the intent behind the testing was hopefully to stop the sabotaging. The Union was told that no one would be discharged as a result of taking the test, but that if anyone refused to take the test he would be suspended. If later he took the test he would be reinstated.

A primary condition for an effective system of collective bargaining is that each side must recognize the survival rights of the other's organization. There is no question that in this instance the survival of the Company's plant was at stake. Thus, given the enormity of the losses that were involved, the complete lack of concrete evidence against the guilty persons, and the desperateness of the situation, it is the opinion of this Arbitrator that resort to the use of the polygraph tests, as an adjunct to the Company's investigation and to its efforts to bring the sabotaging to an end, was a reasonable business decision.

Despite the disfavor with which polygraph tests are viewed in certain circles, their use as a part of a Company's investigation of sabotage is not illegal. Neither is there anything in the contract that prohibits the Company from the use of these tests. Despite what any test might show, no worker, who took the test, was to be discharged. Based upon polygraph results alone, the Company would have had no basis for taking disciplinary action against any employee. Therefore, the Company had every right to expect the cooperation of its employees in the investigation. Included in that cooperation was the taking of the polygraph tests. Given the enormity

of the sabotage involved, and the safeguards that were present, that extent of cooperation was not unreasonable.

At the arbitration hearing two of the Grievants testified that the reasons that they did not take the tests were (1) "the principle of the thing," (2) "If they could not take my word I would not take the test." When these personal reasons are balanced against the overwhelming precariousness of the Company's position as a result of the sabotage, it is my conclusion that the use of the polygraph tests was fully justified, and the suspension of those employees until they agreed to take the tests was a valid action under Management Rights.

AWARD

It is therefore my award that the grievance be denied. The Grievants will be given the opportunity to take the polygraph tests, and following such will be reinstated without any loss of seniority, but without back pay.

> S/Thomas J. McDermott Thomas J. McDermott, Arbitrator

Given this 23rd day of October, 1975.

* * * * * *

IN ARBITRATION

EXHIBITORS FILM DELIVERY &)	
SERVICE, INC.,)	
and)	Date of Hearing:
INTERNATIONAL BROTHERHOOD)	September 17, 1976.
of TEAMSTERS, Local No. 955.)	

<u>OPINION</u>

ISSUE

1) Was one of the grievances timely filed?

2) Were Grievants discharged for just cause?

FACTS

Exhibitors Film Delivery & Service, Inc., is a forwarder of small parcels. The merchandise transported by the Company runs the gamut of goods, and involves such diverse products as drugs, clothing, appliances, sporting goods, and the like.

Because the goods shipped are of general use, the Company has a recurrent problem with theft. It has had a policy of discharging any employee caught engaging in theft, no matter how minor the theft might appear.

JAMES MCWERTY reported for work for the first time on July 2, 1976. He was sixteen years old. He had been unable to get a summer job in his home town because a strike at a local plant had resulted in a surplus of people looking for work.

He was assigned as an auditor on one of the four unloading lines in the warehouse. These lines consisted of conveyors. A truck would back up to a conveyor, and its contents would be unloaded onto the conveyor. As the packages moved down the conveyor, they would be coded as to their destination, and checked for transporation charges by an auditor. Packages in need of quick repair would receive it. Those packages needing more extensive repair would be removed and set aside to be sent to the OS & D (Over, Short, and Damaged) Department.

MCWERTY, who worked as an auditor, testified that during the course of the day, a package whose top had come unsealed was taken from the

conveyor and set aside to be sent to OS & D. While sitting on the floor between two lines, several of the employees gathered around it and started to remove its contents, which consisted of T-shirts.

Some of the employees tried on the T-shirts, making remarks to the effect that they were having a fashion show. Three employees, however, took T-shirts and walked away with them. This occurred around 6:00 P.M.

That night MCWERTY was driven home by his grandfather, who was general manager of the Company. During their casual conversation, MCWERTY mentioned the incident to his grandfather.

The next working day for MCWERTY was July 6, 1976, following the 4th of July holiday. Upon arrival at work, he was taken around the premises to identify those whom he believed to have taken T-shirts. He identified the two Grievants herein, and a third person.

After identification of the Grievants and the third employee as those taking the T-shirts, those identified were called into the supervisor's office separately, and questioned concerning the incident. Each denied either knowledge of or participation in the theft.

The men were asked to take lie detector tests. Any reluctance to do so was met by Company officials with a reminder that their job applications stated that they could be discharged upon refusal to submit to such a test. The three took polygraph tests on July 7, 1976, administered to them by a local concern specializing in such tests.

According to Company evidence, the results of these tests indicated that all three had participated in the incident, and in at least one instance knew of others who also had done so. These results were disclosed to the Union, though the Company refused to let Union officials do more than read the report.

Thereafter, on July 8, 1976, all three employees were discharged. Grievant HUDSON immediately went to the Union office, where he wrote out a grievance protesting his discharge. This he gave to a Union official.

Grievant DAVIS called this same official to complain later on July 8th, but he did not go to the Union office, nor did he write up a formal grievance concerning his discharge at that time.

On July 9th the Union official met with the Company general manager to discuss the discharge of the three men. He was advised that as far as the Company was concerned, regardless of Union protests, the discharges

were final. The Union official then gave the general manager the grievance submitted by HUDSON.

After the presentation of this grievance form to the Company official, that official asked if there were any more "formal grievances". He was told that the one of HUDSON was the only one.

On July 12th, or possibly the 13th, the Union and Company officials met to discuss the discharges again. By this time the other two discharged employees had given their Union official written grievances. Unfortunately, he had failed at that time to give the forms to the Company official. However, the Company still refused to reinstate any of the three.

The oversight occurred to the Union official on July 21st, when he talked to a Company official by phone relative to the discharge of the three. In the course of the conversation, the Company official, according to his testimony, advised the Union official that no grievances were pending except for HUDSON's. The Union official, however, maintained that the first knowledge that he had that only one grievance was pending was much later when Union counsel, after a discussion with Company counsel, so advised him.

In any event, the other grievance (DAVIS's) was mailed to the Company and received by it on July 22, 1976.

Prior to the hearing, the Union arranged to have the three discharged employees tested for truthfulness by a method known as Psychological Stress Evaluation (PSE). By this method, changes in voice patterns caused involuntarily by stress are used to determine stress levels, which are determined by the evaluator to be indicative of untruthfulness.

According to the evaluator's PSE, the two Grievants showed generally minimal stress, while the third employee, not a grievant, showed great stress.

DISCUSSION AND OPINION

The first issue involved here concerns the timeliness of the submission of the grievance of DAVIS. The Collective Bargaining Agreement requires that a grievance be submitted within five working days of the incident to be protested. This would be July 15th. It is clear from the Collective Bargaining Agreement that this submission need not be in any particular form, or even written.

There is no question that HUDSON's grievance was properly submitted.

Additionally, there is no question that the discharges were discussed on at least two occasions within the five-day period. The first would have been the day following the discharge, that is, July 9th, and the second on July 12th or 13th, both within the five-day period.

It is true that after the first meeting, the Union official stated that he had only one official grievance. But it seems clear to me that the later call of July 12th or 13th protested all discharges, and could have no other purpose but to be a presentation of a protest of the Company's action. That is in essence a grievance.

A previous arbitration between the parties on this point had resulted in an admonition to the Union that formal requirements for the presentation of a grievance should be adhered to. However, the Union's protest that the parties nonetheless conducted these matters rather informally appears correct.

In short, the Company is ruled against on this point. There were enough conversations between the parties within the five-day period to put the Company on notice that it was faced with three protests.

The parties spent a great deal of time and effort on the subject of lie detectors and PSE. I would give little weight to polygraph results and even less to PSE. All of the criticisms leveled against lie detectors (polygraphs) in the abundant literature on the subject are even more pertinent to PSE. The latter method is new, relatively untried, relatively unknown (I heard of it for the first time at the hearing), and has not been very much used. Even the foundation of expertise of the PSE was not as impressive as that of the polygraph operator.

The Union advances several arguments in defense of Grievants. For instance, on the question of intent, the Union argues that the fact that the employees taking the T-shirts made no effort to hide this, as MCWERTY testified, indicates they had no criminal intent. But such action by Grievants could be read as brazen conduct by those who did not fear detection. After all, so far as Grievants knew, MCWERTY was just another new young employee whom they could consider "one of the boys".

The Union also argued that what was alleged to have been done did not amount to a conversion of the T-shirts by those taking them. At common law, however, any conduct in derogation of the rights of the true owner or bailee is sufficient to show conversation to the taker's use. Such

would be the taking of the T-shirts from the box and walking away with them.

The Union argues that the Company has not excluded the possibility that the T-shirts supposedly taken were later returned, thus negating an intent to steal. But it is fundamental that returning stolen property does not cancel the offense - it merely mitigates the punishment. If someone robs a bank in the afternoon, and returns the money taken by later placing it in the night depository, he is still a bank robber, even though his punishment be less severe as a result.

An issue was made by the Union of the number of T-shirts in the box, and the fact that the box of T-shirts was left in the warehouse for others to tamper with, casting doubt on the degree of loss. But this is all beside the point: If Grievants took the T-shirts, that is sufficient. Whether others took some later would not change the fact that Grievants did, if they did.

The most troublesome point in the whole situation is the argument advanced by the Union that, because the Grievants are being discharged for theft, the Company must prove its case under the criminal law standard of "beyond a reasonable doubt". An examination of the citations given by the Union fully supports this position. The rationale, then, is apparent. Discharge of an employee is serious in any case. But when coupled with a charge of a crime, it becomes much more so.

This case then boils down to one basic proposition: Shall discharge of the Grievants be sustained solely by the word of one witness, with no other corroboration?

I believe not.

I do not doubt that witness MCWERTY was sincere. But while accepting his sincerity, I do not necessarily concede his accuracy.

He was on the job for only a short time. He knew none of the employees prior to that day. Being new on the job, he would be unlikely to spend too much time doing anything but his job. As the general manager's grandson, he would be even more likely to be extremely attentive to his work.

In addition, the whole incident was of short duration, giving little chance for close observation. Further, his attention would not necessarily have been called to the incident immediately, given the need for a new

employee to concentrate on an unfamiliar task.

My willingness to accept MCWERTY's identification is further weakened by the fact that there was a lapse of time of several days before he was called upon to make his identification. This resulted in discrepancies of identification as to details of hair color, etc. In a situation such as this, one might call that a "tremendous trifle".

There was also no corroboration of the theft by recovery of the stolen articles, nor observation of them in the possession of anyone, nor any of the several other methods by which theft may be proven.

The grievance is sustained, and the Grievants ordered reinstated, without back pay, but with no loss of seniority. I do not believe an award of back pay would be appropriate in a situation where Grievants obviously knew more than they would admit. They could have helped in stopping a bad situation, and while loyalty to fellow employees is commendable, it cannot be condoned when it protects someone's dishonesty.

The costs are assessed equally.

Dated this 1st day of December, 1976.

S/Gerald Cohen

GERALD COHEN Arbitrator 722 Chestnut Street St. Louis, Missouri 63101 (314) 231-2020.

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Polygraph 1976, 05(4)

By

American Psychological Association

Recent revelations of CIA and Defense Department experimentation with LSD raise the question of why some people have "bad trips" while others do not. Adverse reactions to LSD ranged from outright suicide, as in the much publicized case of former Army chemist Frank Olson, to permanent insanity or recurrent terrifying flashbacks of death and despair.

There is now scientific evidence that persons who reluctantly use LSD or marijuana because of peer pressure, or who turn to these drugs in search of chemical solutions for emotional problems, are far more likely to experience such acute adverse reactions than are those who use the drugs simply for pleasure.

In a study of 483 male drug users, psychologist Murray P. Naditch also found that the risk of having a bad LSD experience increases with use of the drug and becomes further compounded if the user is poorly adjusted or mentally ill.

The Cornell University research reported on his findings in the August 1975 issue of the Journal of Abnormal Psychology, published bymonthly by the American Psychological Association. His article entitled, "Relation of Motives for Drug Use and Psychopathology in the Development of Acute Adverse Reactions to Psychoactive Drugs", explored the relationship between different motives for taking drugs, psychopathology and the adverse reactions.

Pleasure and curiosity seeking were predominant motives among marijuana smokers. But therapeutic intentions turned out to be the single most important factor underlying acute adverse reactions to the drug, figuring even more heavily than factors like schizophrenia, maladjustment or regressive tendencies.

LSD use proved less attributable to benign pleasure seeking; therapeutic motives alone accounted for nearly a fifth of all LSD use in Naditch's sample. And these problem-prone motives were in turn reinforced by any tendencies toward schizophrenia or regression in the individual's personality.

"The tendency to use regressive modes of problem solving under stress ... was the most important underlying determinant of use of drugs as a way to solve life problems", remarked Naditch.

* * * * * *

LILINOIS REGULATIONS

Regulations Promulgated for the Administration and Enforcement of the Illinois Detection of Deception Examiner Act, issued by Ronald E. Stackler, Director; Department of Registration, Springfield, Illinois 62786.

Regulation I - Definitions.

As used in these Regulations:

"Examination," means a detection of deception examination.

"Examinee," means the person who undergoes a detection of deception examination.

"Examiner," means the holder of a Certificate of Registration as a Licensed Detection of Deception Examiner issued by the Department of Registration and Education of the State of Illinois.

"Client," means the person who engages the services of an Examiner for the purpose of administering a detection of deception examination to a third party.

"Examiner Trainee," means the holder of a Certificate of Registration as a Licensed Detection of Deception Examiner Intern issued by the Department of Registration and Education of the State of Illinois.

"Examiner Trainee Education and Training," To be licensed by the State of Illinois as a Detection of Deception Examiner, Examiner Interns shall be required to have completed a minimum of 250 clock hours of formalized instruction, under the supervision of a qualified examiner, in the following areas:

> History of Polygraph Law Physiology Instrumentation Psychology Polygraph Technique Chart Interpretation Interrogation

That portion of the course of study consisting of specialized subjects such as psychology, physiology, and law shall be formalized instructions provided by persons qualified in respective fields to teach the subject matter required and cover the content thereof as it relates to detection of deception under the personal supervision and control of the Examiner-Trainer. Such instructors need not be trained as examiners but must be approved by the Department.

It shall be incumbent upon each Examiner who wishes to qualify as an Examiner-Trainer to submit, for the approval of the Detection of Deception

Examiner Committee (hereinafter called "the Committee") his qualifications to act as instructor in the areas above stated, and each Examiner-Trainer approved by the Committee shall be deemed qualified to instruct in such particular fields or in any of such fields specifically delineated by the Committee (each Examiner-Trainer - so approved being hereinafter called "Approved Examiner-Trainer").

In the case of psychology, physiology and law, or any of them, an Approved Examiner-Trainer shall, if he is not approved to instruct in any of such areas refer a trainee for instruction in such, as same relates to detection of deception, to an instructor approved by the Committee. No such instructor shall be approved by the Committee who does not have, prior to such approval, an academic degree at least at the baccalaureate level from a college or university accredited by the Department.

Regulation II - Advertising - Soliciting - Fee Splitting - Discrimination.

1. An Examiner shall not advertise in any manner with a view of deceiving the public, or in any way that will tend to deceive or defraud the public.

2. An Examiner shall not publish, directly or indirectly, or circulate any fraudulent, false or misleading statements as to the skill or method of practice of any person or Examiner.

3. An Examiner shall not claim superiority over other Detection of Deception Examiners as to his skill or method of practice.

4. An Examiner shall not publish reports of cases or certificates of the same in any public advertising media.

5. An Examiner shall not give a public demonstration of the detection of deception.

6. An Examiner shall not advertise free detection of deception examinations as an inducement to secure patronage.

7. An Examiner shall not advertise any amount as a price or fee for the service or services of any person engaged in the practice of the detection of deception.

8. An Examiner shall not employ "cappers" or "steerers" to obtain patronage.

9. An Examiner shall not divide fees or agree to split or divide the fees received for detection of deception services with any person for bringing or referring a client.

10. An Examiner shall not refuse to render detection of deception services to or for any person solely on account of the race, color, creed or national origin of such person. Regulation III - When an Examination Shall Not be Administered.

1. An Examiner shall not knowingly administer a detection of deception examination in any case where the subject matter of the examination relates to an illegal business, criminal enterprises or scheme of criminal misconduct in which either the Client or Examinee are employed or otherwise engaged in.

2. An Examiner shall not administer a detection of deception examination in any case where there is reason to believe that the Client, as a result thereof or in connection therewith, intends to perform a criminal act.

Regulation IV - Pre-Examination Interview with Prospective Examinee Required in All Cases - Examiner's Duty to Inform Prospective Examinee - Examinee's Consent Required.

An Examiner shall not administer a detection of deception examination in any case without first conducting a pre-examination interview with the prospective Examinee in accordance with the following minimum requirements relating thereto:

1. The Examiner shall inform the prospective Examinee of each and all of the issues to be determined in the examination and reported upon by the Examiner.

2. The questions to be asked at the examination shall be formulated and reduced to writing, the same shall be read to the prospective Examinee, and his answers to the same shall be recorded in writing thereon.

3. The Examiner shall not initiate an accusatory interrogation prior to the tests, for the purpose of eliciting a confession or admission against interest from the prospective Examinee.

4. The Examiner shall inform the prospective Examinee that taking the detection of deception examination must be his voluntary act, and the Examiner shall obtain the Examinee's consent to undergo such examination.

Regulation V - Examination Procedure.

1. When an examination is being administered the Examiner who is administering the same shall be present with the Examinee in the examination room, but no other person shall be present therein without the Examinee's knowledge and prior written consent as to the identity and the reason for the presence of such person.

2. An examination in progress may be observed or listened to by Examiners or Examiner Trainees from outside the examination room, but no other person may do so without the Examinee's knowledge and prior written consent as to the identity of any such person, the means used for observing or listening by such person, the reason for such person observing or listening to the examination.

3. An Examiner shall, immediately upon request of the Examinee, terminate an examination in progress. 4. A polygraph test shall not continue for more than four (4) minutes while the arm pressure cuff is being utilized, nor more than five (5) minutes while the wrist cuff is being utilized.

5. An Examiner shall utilize during the examination both relevant issue questions and questions to be used for comparison purposes.

6. An Examiner, when administering a detection of deception examination, shall not attempt to determine truth or deception on matters or issues not previously discussed with the Examinee at the pre-examination interview or not reasonably related to the matters or issues previously discussed with the Examinee.

7. An Examiner shall not initiate an accusatory interrogation for the purpose of eliciting a confession or admission against interest from the Examinee until after he has conducted two (2) detection of deception tests on the issues submitted for determination.

Regulation VI - Disclosure of the Results of a Detection of Deception Examination - Written Report Required.

1. An Examiner shall, in every case in which he has administered a detection of deception examination, except those relating to applicants for employment or continued employment, prepare a written report of the same which shall contain the following:

1. A statement of the facts upon which he conducted the pre-examination interview with the Examinee and the detection of deception examination.

2. A list of the questions asked at the examination which were relevant to the issues that the Examinee agreed to be examined upon.

3. His conclusion as to truth or deception of the Examinee's answer to each of the questions listed in his report.

2. An Examiner shall not include in his report any conclusions as to the truth or deception of the Examinee with regard to any matters not submitted by the Client for determination.

3. An Examiner shall not report his professional conclusion as to truth or deception on a relevant issue without having asked the question relating to that issue at least once in each of two separate tests.

Regulation VII - Required Records.

An Examiner shall, in the case of every detection of deception examination administered by him, create and maintain a record for at least five (5) years which record shall contain at least the following:

1. All material upon which he conducted the pre-examination interview.

2. The questions asked of the Examinee at the pre-examination interview and the Examinee's answers to the same.

3. The examination question as formulated at the pre-examination interview and the Examinee's answer to the same.

4. The exact questions asked of the Examinee at any time during the detection of deception examination and the Examinee's answers thereto.

5. All recordings of the polygraph instrument made during the detection of deception examination adequately identified as to the order in which the recordings were obtained, the point at which every question was asked and the answer thereto, the identification of each question and any notations indicating changes of the Examinee's behavior and environmental influence that might affect the polygraph's recordings.

6. All written consents and acknowledgements of the Examinee as required elsewhere in these Regulations.

* * * * * *

Answers to Polygraph Review on pages 345-346.

a.
c.
b.
c.
True.
False.
True.
True.
True.
True.
False.

* * * * * *

Polygraph 1976, 05(4)

In 1976 the State of Arizona passed a licensing act. Passed by the 32nd Legislature in the Second Regular Session, the Act, initiated as Senate Bill 1326, the law was signed by the Governor June 27, 1976. The law reads:

An Act

Relating to Professions and Occupations: providing for regulation, examination and licensing of polygraph examiners by the Department of Public Safety; prescribing qualifications, bonds, procedures, fees, powers and duties; prescribing penalties; providing for an advisory board, and amending Title 32, Arizona Revised Statutes, by adding Chapter 27.

Be it enacted by the Legislature of the State of Arizona: Section 1. Title 32, Arizona Revised Statutes, is amended by adding chapter 27, to read:

Chapter 27

Polygraph Examiners

Article 1. General Provisions

32-2701. Definitions

In this Article, unless the context otherwise requires:

1. "Department" means the Department of Public Safety.

2. "Intern" means the study of polygraphy and the administration of polygraph examinations by a trainee for a period of twelve months under the personal supervision and control of a licensed examiner of this state.

3. "Polygraph Examiner" means any person who uses any device or instrument which records as minimum standards, permanently and simultaneously, the examinee's cardiovascular and respiratory patterns, and galvanic skin response, in order to examine individuals for the purpose of detecting truth or deception. Such an instrument may record additional physiological changes pertinent to the detection of truth or deception.

4. "School" means a course of study of polygraphy in any public or private institution that has been licensed by the Department of Education in the state wherein that school is located, or any government polygraph school, and which has been approved by the American Polygraph

Association and the Department of Public Safety.

5. "Student" is a person that is training in a course of study of polygraphy in a licensed and approved school under the personal supervision and control of a licensed examiner of this state.

32-2702. Powers and duties of department

A. The Department may issue and revoke licenses of polygraph examiners. The Department may promulgate rules and regulations to carry out the provisions of this chapter.

B. No polygraph examiner shall administer examinations for the purposes of detecting truth or deception without first receiving from the Department a license as prescribed by this Chapter, except any person licensed to practice medicine, psychiatry or psychology in this state, when the results of such examination are to be used in research.

C. The Director of the Department shall appoint an advisory board of five members to advise him in the preparation or revision of rules and regulations which may be adopted under provisions of this Chapter and to advise the Director regarding the licensing and suspension or revocation of a licensee. Of the five members, two shall be full-time employees of a state, county, municipal law enforcement agency who are licensed under this Chapter and two shall be private licensees, except that the members first appointed need not be holders of valid licenses under this Chapter but shall have a general knowledge of the field of polygraphy. The fifth member shall be a representative of the general public and shall not be the holder of a license under this Chapter and shall not hold any financial interest in any business involving polygraphy. In no case shall any law enforcement agency or private business, firm or corporation have more than one employee on the board at any time. Members shall serve for a term of five years and of the members first appointed one shall serve for a term ending the Third Monday in January, 1978, and one each for a term ending on the third Monday in January one, two, three, and four years thereafter.

32-2703. Examiner license qualifications

A person is qualified to receive a license as a polygraph examiner in this state who:

1. Is at least eighteen years of age.

2. Has not been convicted of a felony or has had his or her civil rights restored pursuant to law.

3. Holds a baccalaureate degree from a college or university accredited by the American Association of Collegiate Registrars and Admissions Officers, or who graduated from an accredited high school or its equivalent and has been engaged full time for a period of five consecutive years in federal, state, county or municipal law enforcement investigations immediately preceding application for such license, or who has been engaged full time for a period of five consecutive years as a licensed private investigator immediately preceding such application.

4. Who has satisfactorily completed a course of polygraph instruction in an approved school.

5. Who has passed an oral and written examination compiled, prepared and conducted by the Department, to determine his competency to obtain a license to practice as a polygraph examiner, polygraphist, or detection of deception examiner in this state.

32-2704. Surety bond required.

Each individual licensee, except state, county or municipal employees covered by blanket bond, shall be required to post a surety bond in the amount of five thousand dollars. The bond shall be executed and acknowledged by the applicant as principal and by a corporation, licensed to transact fidelity and surety business in this state, as surety. The bond shall be continuous in form and run concurrently with the license period. The bond required by this Chapter shall be in favor of the state for the benefit of all judgements which may be recovered against the licensee by reason of any wrongful or illegal acts committed in the course of polygraph examinations.

32-2705. Application for original license

All applicants, including non-residents, for original license in this state shall satisfy the requirements of this Chapter. All applications for original license shall be made to the Department in writing, under oath on forms prescribed by the Department and shall be accompanied by the required fee, which is not refundable. Any such application shall provide such information as in the judgement of the Department will enable it to pass on the qualifications of the applicant for a license. Each non-resident

applicant must file an irrevocable consent that service of process may be made on the Department in any actions or claims arising against such applicant in this state.

32-2706. Reciprocity

An applicant who is a polygraph examiner licensed under the laws of another state or territory of the United States may be issued a license without examination by the Department, at its discretion, upon payment of the required fee and the production of satisfactory proof that:

1. He has satisfied the requirements of Section 32-2704.

2. The requirements for the licensing of examiners in such particular state or territory of the United States were, at the date of licensing, substantially equivalent to the requirements then in force in this state.

3. The applicant had lawfully engaged in the administration of polygraph examinations under the laws of such state or territory for at least two years prior to his application for license hereunder.

4. The applicant's license in the foreign state is in good standing.

32-2707. Intern license

A. The Department may issue an intern license upon a satisfactory showing by applicant of having completed a course in polygraphy in an approved school. Prior to issuance of an intern license, the applicant must pay the required fee and provide such information to the Department as it may deem necessary to determine applicant's qualifications.

B. An intern license shall be valid for a period of six months from date of issue. Such license may be extended or renewed for a term not to exceed six months upon good cause shown to the Department.

C. An intern shall not be entitled to hold an intern license after the expiration of the original six month period and one six month extension, if such extension is granted by the Department, until twelve months after the date of expiration of the last intern license held by said intern.

D. At the time of application for an intern license the applicant shall furnish the Department with the name and address of an Arizona . licensed polygraph examiner or the Department shall assign such applicant to one of their choosing. Any polygraph examiner licensed in this state shall act as a supervising examiner for an intern if so chosen and notified by the Department.

E. This Chapter shall not prohibit the intern from engaging in the administration of polygraph examinations. It does require that such intern, at least once each month throughout his internship, consult with the supervisory examiner about his progress in the administration of polygraph examinations and his expertise in chart interpretation.

F. The intern may make application for and pay the required fee, at the end of his internship, for a written and oral examination to determine his competency to obtain a polygraph examiner's license. At the time of application for the written and oral examination, the supervising examiner of such applicant must furnish to the Department a written report noting such applicant's competency in the administration of polygraph examinations and of his expertise in chart interpretation.

32-2708. Required application fee

All written applications to the Department for any license authorized by this Chapter must be accompanied by a fee of fifty dollars to cover costs. The fee shall not be refundable or credited as payment against the license fee.

32-2709. Examination and license fees

A. The Department shall collect the following fees:

1. For an original polygraph examiner's license, fifty dollars.

2. For an original polygraph examiner's license by an out-of-state licensed examiner, seventy-five dollars.

3. For any renewal license authorized under this Chapter, thirtyfive dollars.

4. For an intern license, twenty-five dollars.

5. For any duplicate license, fifteen dollars.

B. Any examiner whose license has been lapsed more than one year from expiration date of the last license held, shall pay the required application fee and take the written or oral examination, and pay the fee of an original license.

C. No fees shall be required of a full-time employee of a federal, state, county or municipal law enforcement agency.

D. Any full-time employee of a federal, state, county or municipal law enforcement agency who administers examinations outside of his or her full-time employment as federal, state, county or municipal law enforcement examiner shall obtain a separate license and pay the required fees for an original license.

32-2710. Failure to take examination

If an applicant neglects, fails or refuses to take an examination for a license under this chapter within ninety days after filing his application, the fee paid by the applicant shall be forfeited to the Department and the application denied. Such applicant may thereafter make a new application for examination, accompanied by the required fee.

32-2711. Display of license

A license or duplicate license or intern license certificate must be prominently displayed at the place of business of the polygraph examiner or at the place of internship.

32-2712. Termination and renewal of examiner's license

A. Each polygraph examiner's license shall be issued for the term of one year, and shall, unless suspended or revoked, be renewed annually as prescribed by the Department. A polygraph examiner whose license has expired, may at any time within one year after the expiration thereof, obtain a renewal license without written or oral examination by making a renewal application therefor and otherwise satisfying the provisions of this Chapter.

B. Any polygraph examiner whose license expired while he was in the federal service on active duty, actively engaged in the administration of polygraph examinations with the armed forces of the United States or the National Guard called into service or training, or in training or education under the supervision of the United States, preliminary to induction into the military service, may have his license renewed without a written examination if within one year after termination of such service, training or education, except under conditions other than honorable, he furnishes the board with an affidavit to the effect that his service, training or education has been so terminated.

C. Any polygraph examiner whose licensed expired while he was in the federal service described above, who has not actively engaged in the administration of polygraph examinations while serving in said federal service will be required to make application, accompanied by the required fee for a written and oral examination, if his original license has been expired more than twelve months.

32-2713. Grounds for refusal, suspension or revocation

The Department may refuse to issue or may suspend or revoke a license

on any one or more of the following grounds:

1. For material misstatement in the application for an original license, any renewal license or intern license.

2. For failing to inform a subject to be examined that his participation in the examination is voluntary.

3. For failing to inform a subject to be examined as to the nature of the examination.

4. For failing to obtain an examinee's signature of a voluntary consent form prior to the application of instrument attachments to the body of the examinee.

5. For making inquiries during a private industry or business preemployment examination regarding an applicant's religious, labor, or political affiliation, and sexual activities.

6. For making inquiries of a job applicant into a factor which might be considered in a manner which might violate Title VII of the Federal Civil Rights Act of 1964, or any other law aimed at achieving equal employment opportunities for all.

7. For failing to inform the subject of the results of the examination if so requested.

8. For willful disregard or violation of this Chapter or any regulation or rule issued pursuant hereto, including, but not limited to, willfully making a false report concerning an examination for polygraph examination purposes.

9. For failing to maintain a log which records as a minimum, the date, name of person examined, type of examination, and to whom the report was furnished.

10. For failing, within a reasonable time, to provide information requested by the Department as the result of a formal complaint to the Department which would indicate a violation of this Chapter.

11. For making any willful misrepresentation or false promises or causing to be printed any false or misleading advertisement for the purpose of directly or indirectly obtaining business or trainees.

12. For allowing one's license under this Chapter to be used by any unlicensed person in violation of the provisions of this Chapter.

13. For willfully aiding or abetting another in the violation of this Chapter, or any regulation or rule issued pursuant hereto.

32-2714. Denial of application; hearing; appeal

The procedures set forth in Title 41, Chapter 6, Article 1, relative to denial of application, hearing and appeal, shall be applicable to all licenses issued under this Chapter.

32-2715. Penalties

Any person, firm, business or corporation who violates any provision of this Chapter, or any person who falsely states or represents that he has been or is a polygraph examiner or trainee or that he is qualified to apply instrumentation for the detection of deception or verification of truth of statements shall be guilty of a misdemeanor punishable by a fine of not less than three hundred dollars nor more than one thousand dollars or by imprisonment in the county jail for a term of not to exceed six months, or both.

Sec. 2. Acquisition of license by present examiners

A. On the effective date of this act, any person who is actually engaged in the occupation, business or profession of polygraph examination in this state, and who is using for the purpose proper instrumentation and who is otherwise qualified under sections 32-2703 and 32-2704 of this act upon application within ninety days, and payment of the required fee, shall be issued a polygraph examiner's license which shall be effective for one year.

B. The Department may waive the requirements of section 32-2703, paragraph 5 of this act for present examiners. The Department shall require a present examiner to submit proof that he has satisfactorily completed a course of study in a non-accredited school, or require such person to prove his knowledge of the administration of polygraph examination.

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Polygraph 1976, 05(4)

POLYGRAPH REVIEW

By

Joseph G. Law, Jr.*

How would you score on a licensing examination? Are you sufficiently up-to-date about such subjects as psychology, physiology, instrumentation, etc? Are you prepared to undergo direct and cross-examination on polygraph subjects in court? A score of 9 or 10 is excellent, 7 or 8 is good, and below 7 may indicate some review is warranted. (Answers are on page 336.)

- 1. The greatest number of deaths due to drug use are caused by:
 - a. barbiturates
 - b. opiates
 - c. hallucinogens
 - d. amphetamines
- 2. Situation: Your test subject is sitting quietly in his chair during the examination when you drop your pen on the floor. He turns his head slightly in the direction of the noise and his GSR goes up. This is an example of:
 - a. habituation
 - b. a perceptual disparity response
 - c. an orienting response
 - d. general nervous tension
- 3. The majority of rapists have been found to be:
 - a. latent homosexuals
 - b. psychopaths
 - c. psychotics
 - d. anxiety neurotics
- 4. There are an estimate _____ million neurotics in the United States population.
 - a. 2
 - b. 5
 - c. 10
 - d. 25
- 5. (T) (F) As a rule, professional criminals do not suffer from significant psychoses or personality disorders.

Guest Contributor for the feature regularly written by Consulting Editor Bobby J. Daily.

- 6. (T) (F) Individuals suffering from psychotic disorders such as schizophrenia are usually fit subjects for polygraph testing.
- 7. (T) (F) Individuals suffering from neurotic disorders such as obsessive-compulsive neurosis are often fit subjects for polygraph testing.
- 8. (T) (F) According to the <u>Diagnostic and Statistical Manual of</u> <u>Mental Disorders</u> (2nd ed., American Psychiatric Association), homosexuality is not a sexual deviation or a mental disorder.
- 9. (T) (F) Pedophilia is a sexual deviation in which an individual engages in sexual relations with a child.
- 10. (T) (F) Exhibitionists and voyeurs ("Peeping Toms") are usually extremely dangerous sex deviates.

* * * * * *

<u>A B S T R A C T S</u>

Naliboff, Bruce D., William H. Rickles, Michael J. Cohen, and Robert S. Naimark. "Interactions of Marijuana and Induced Stress: Forearm Blood Flow, Heart Rate, and Skin Conductance." <u>Psychophysiology</u> volume 13, number 6, pp. 517-522. (November 1976).

To examine the interaction of marijuana and an induced state of stress, on both subjective and physiological measures, two groups of 15 subjects each were given a mental arithmetic task to perform. The sequence of events was 10 min each of pre-stress, stress, post-stress, intoxication (about 20 min), pre-stress, stress, post-stress. In the intoxication phase, one group smoked marijuana contained 14 mg Δ^9 -THC while the other group smoked a placebo. The dependent variables were forearm flow (FBF), heart rate (HR), and skin conductance (SC), and a subjective measure of stress--the Multiple Affect Adjective Checklist (MAACL).

The results revealed all physiological variables to be reactive to the stress task. In addition, marijuana intoxication produced reliable increases in both pre-stress HR and FBF, and yet the physiological response to the post-intoxication stress period showed no significant decrement when compared to the placebo group, Discussion of these results centered around marijuana's effects on tonic and phasic reactivity. [Authors abstract]

- 6. (T) (F) Individuals suffering from psychotic disorders such as schizophrenia are usually fit subjects for polygraph testing.
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- 10. (T) (F) Exhibitionists and voyeurs ("Peeping Toms") are usually extremely dangerous sex deviates.

* * * * * *

ABSTRACTS

Naliboff, Bruce D., William H. Rickles, Michael J. Cohen, and Robert S. Naimark. "Interactions of Marijuana and Induced Stress: Forearm Blood Flow, Heart Rate, and Skin Conductance." <u>Psychophysiology</u> volume 13, number 6, pp. 517-522. (November 1976).

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Steptoe, Andrew. "Blood Pressure Control: A Comparison of Feedback and Instructions Using Pulse Wave Velocity Measurements." <u>Psycho-</u> physiology, volume 13, number 6, pp. 528-535. (November 1976)

A comparison was made between blood pressure changes with exteroceptive feedback and simple instructions. Twenty subjects were instructed either to raise or lower pressure for four sessions, while a further 20 were allowed to view an analogue visual display of mean arterial pressure. Pressure changes were continuously monitored with the pulse wave velocity method.

When changes were analyzed from the initial baseline, both groups showed divergence between increase and decrease over trials, but feedback enhanced control in increase only. On assessment from the running baseline, feedback control was superior in both direction conditions. This difference may be due to interaction between running baseline changes and experimental conditions. Control by feedback groups deteriorated when feedback was withdrawn. Modifications were accompanied by alterations in heart rate, respiratory activity and movement, although the association was of a gross nature only, being more prominent in increase conditions. [Author abstract]

Martin, Irene and John Rust. "Habituation and the Structure of the Electrodermal System." <u>Psychophysiology</u>, volume 13, number 6, pp. 554-562. (November 1976)

The intercorrelations among fifteen common SRR variables were investigated on two samples of male subjects in a standard habituation paradigm. The first group (N=212) was made up of 149 prisoners and 63 controls (mean age=28 years) while the second group (N=84) were all twins (mean age=25 years). All subjects received 21 auditory stimuli at an ISI of 33 sec. Each stimulus was sinusoidal, at 1000 Hz of 1 sec duration and at 95 dB (re 20 N/cm²). The fifteen SRR measures taken from each subject included mean and change scores for basal conductance, response amplitude, spontaneous fluctuation frequency, number of responses, and onset, peak and half-recovery latencies. The variables were intercorrelated and factor analyzed. The .05 rejection region was adopted in all statistical tests. A fairly simple structure for the variables was demonstrated. The results emphasized the importance of a large general reactivity component in most of these variables. Within-subject correlations were calculated and found to be different from across-subject correlations. It is suggested that under constant stimulus conditions subjects display different but individually typical SCR shapes which reduce in size during habituation. [Authors abstract]

Walter, Gary F. and Stephen W. Porges. "Heart Rate and Respiratory Responses as a Function of Task Difficulty: The Use of Discriminant Analysis in the Selection of Psychologically Sensitive Physiological Responses." Psychophysiology, volume 13, number 6, pp. 563-571. (November 1976)

The relationship between physiological response patterns and task difficulty was investigated by evaluating heart rate and respiratory responses during a choice reaction time task with three levels of task difficulty. The data fit a two-component model of attention containing reactive and sustained responses. There were two reactive responses: An immediate deceleration which was independent of task manipulation; and a short latency response, monotonically paralleling task difficulty, which was characterized by acceleration and an increase in heart rate variability. The sustained component exhibited task dependent deceleration and a generalized reduction in heart rate variability and respiration amplitude variability. A stepwise discriminant analysis was performed on the task conditions using physiological responses to determine responses sensitive to task demands. Physiological response patterns were monotomically ordered as a function of task difficulty, suggesting that this technique may have advantages for determining physiological responses most sensitive to psychological manipulation.

[Authors abstract]

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