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# COGNITIVE AROUSAL AS A MEANS OF EVALUATION

By

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## OVERVIEW

Many techniques exist for conducting examinations in forensic psychophysiological detection of deception. Those of primary consideration include the Zone Comparison, the Modified General Question Test, and the Relevant/Irrelevant test. Among these technique are varied methods used for evaluation of test results. For techniques using control questions some examiners compare physiological responses at relevant questions against the greater reaction between two adjacent control questions, while others compare against the lesser of the control question reactions. Still others compare each relevant response with the greatest control question reaction irrespective of its position within the list of questions. When the technique has no control questions, such as some versions of the Relevant/Irrelevant test, the examiner may compare the arousal level among relevant questions to see whether one question has a significantly greater reaction than other relevant questions. The examiner may wish to determine whether the relevant question reaction is greater than that at the irrelevant questions. He may compare the reactions at the relevant questions with an overall truth question or with some question designed to evoke an emotional response such as a reverse norm or other control stimulus questions. With the countless number of methods used in arriving at a diagnosis of truth or deception there is no wonder why forensic psychophysiology undergoes such rigorous scrutiny and is the topic of such fervent debate.

A substantial amount of research has been conducted on the evaluation processes used in control question tests, (Capps & Ansley, 1992, Capps & Ansley, 1993, Koll, 1979, Podlesney, Raskin & Barland, 1976, Raskin, Barland & Podlesney, 1978). There is a sparsity of published research on Relevant/Irrelevant tests. The research in this report investigates one method of analysis frequently used in the evaluation of physiological data obtained during a Relevant/Irrelevant test.

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During the course of a detection of deception examination a subject should exhibit some physiological arousal to one or more of the questions posed during the examination. Should this fail to occur the examiner would normally insert a stimulus question to determine whether that subject possessed the capability to respond. It should be noted that examiners frequently insert stimulus type questions for comparison purposes even when arousals occur at the relevant questions. This question could take many forms, but for the purposes of this study a reverse norm question was selected.

The reverse norm in this study is defined as a question where the examiner intentionally makes an error as to the identity of the subject and asks during the test if he is called by a name other than that name he has told the examiner he is called. For example, during a pre-test interview the subject might tell the examiner that he is known as John but during the test the examiner asks, "Are you called Alan?" In theory this confusion would evoke a physiological response by the examinee. The response, normally, would confirm whether the subject had the ability to respond. This type of response should be associated with a cognitive arousal as opposed to an emotional arousal believed to occur when a person is attempting deception to a relevant or control question.

A growing number of examiners use this question for a comparison with the relevant question(s) to determine truth or deception. This is based on the hypothesis that a truthful person will respond greater to the reverse norm than the relevant question and a deceptive person will respond greater to the relevant question than the reverse norm. The theory on which this premise is based may be seriously flawed. This research investigates the hypothesis that when the subject is diagnosed as deceptive the physiological response to the relevant question will be greater than that at the reverse norm question. Conversely, it will investigate the theory that a person diagnosed as truthful will demonstrate a greater response to the reverse norm question than to the relevant question.

## BACKGROUND

From the beginning of research into the field of detection of deception scientists have investigated different methods for evaluating the physiological data produced during a polygraph examination. Physiological reactions may occur to questions for a number of reasons unrelated to deception (Reid & Inbau, 1966). This prevents the examiner from simply identifying that a change occurred in absence of any other information. Examiners began to look for consistency of reactions across multiple iterations of a question. They were interested in the specificity of the response across physiological parameters. They were also concerned with the significance of the response compared with some other variable.

Lombroso compared the reaction on a relevant question to that reaction which was the result of a shock administered by an adjustable Rhumkorff coil, prior to the test concerning the offense under investigation (Lombroso, 1911).

Father Summers compared those questions encompassing the relevant issue with "emotional standards" such as "Are you living with your wife?" or "Were you ever arrested?" (Summers, 1939). These questions were selected after a careful analysis of the suspect's life in an attempt to evoke "intense psychogalvanic reactions to surprise, anger, shame or anxiety ...". If the reactions to relevant questions were consistently greater than those to his "emotional standards" the individual was diagnosed as deceptive. However, if the responses to the relevant questions was not greater, then the person was presumed to be truthful.

The Keeler Institute, founded by Leonarde Keeler who developed the Relevant/Irrelevant technique, taught that the physiological response activity that occurred at the announcement of test beginning was illustrative of what would occur when the subject attempted deception (Marcy, *et al.*, 1975). This presents yet another variable for comparison to the relevant question.

## METHOD

An experienced polygraph examiner was asked to include a reverse norm as the last question asked on the final chart of each test he conducted using the Modified General Question Test. When the reverse norm is used in the Relevant/Irrelevant test it is normally asked after the examiner has collected all the physiological data necessary to evaluate the relevant questions. That same procedure was used in this experiment. The Modified General Question Test was used rather than the Relevant/Irrelevant Test because of the availability of data. There was no reason to believe that the arousal level to the Reverse Norm would be greater or less in one format than in any other format.

The data collection covered a period of thirteen months and involved the administration of 140 examinations. Each of the cases was the result of an actual criminal investigation conducted by a law enforcement agency. Of those 140 cases the original examiner rendered an opinion of no deception indicated on 38, deception indicated on 86 and inconclusive diagnosis on 16. Of the 86 examinations diagnosed as deceptive, five were initially called inconclusive but were subsequently confirmed deceptive by confession of the subject of the examination. The examiner used a numerical scoring system based on a three position scale in arriving at a decision on each case. The final iteration of questions, that containing the Reverse Norm, was subjected to analysis by the Polyscore™ 2.9, algorithm developed by the Applied Physics Laboratory of Johns Hopkins University. The Rank Order category of the algorithm was applied for analysis. This process involved the ranking of questions based on the physiological response occurring at each question as quantified by those features evaluated by the Polyscore™ system. A statistical process known as logistic regression is applied in analyzing the data. A record was maintained which identified by case whether the response to the reverse norm was greater, equal to, or less than the greatest response occurring at a relevant question. This information was separated by those diagnosed as truthful, deceptive, or inconclusive.

## RESULTS

Of the 86 cases diagnosed as deceptive, the response to the reverse norm was greater than the dominant relevant question response on 42 cases. The dominant relevant response referred to that relevant question judged to have the greatest overall response across all physiological components. In 44 of the 86 cases the response to the reverse norm was less than that at the dominant relevant question. There were no cases where the responses to the two question types were judged to be equal. Using a standard one tailed statistical test to determine the equality of populations, the results produced a  $z = .2157$ ,  $p = .4571$ . There was no statistical difference in the number of responses to relevant questions as opposed to reverse norm questions for the cases diagnosed as deceptive. Of the 38 cases diagnosed as truthful, the response to the reverse norm was greater than the dominant relevant in 27 cases. In 11 of the 38 cases the response at the reverse norm was less than that occurring at the dominant relevant question. Using a standard one tailed statistical test to determine the equality of populations, the results produced a  $z = 2.861$ ,  $p = .0069$ . There was a statistically significant difference in the number of responses occurring at the relevant question as opposed to the reverse norm for the cases diagnosed as truthful.

Of the 140 total cases, 65 were identified as having responses greater at the dominant relevant question than at the reverse norm. Seventy-five were identified as having greater responses at the reverse norm than at the dominant relevant question. Using a standard two tailed statistical test to determine the equality of populations, the results produced a  $z = .847$ ,  $p = .3970$ . There was no statistical difference in the number of responses to reverse norms as opposed to relevant questions across all tests results.

## DISCUSSION

This research clearly illustrates that the use of a reverse norm for comparative purposes is an inappropriate application of this type question. It may well serve as a basis of determining response capability but not relative to the other questions. One must even question its value in this regard when a response only signals the ability to demonstrate a cognitive arousal, while the relevant questions are intended to stimulate an emotional arousal. It may make little difference that a person is capable of demonstrating one type arousal if he is incapable of exhibiting another, especially when that other is the issue with which the test is concerned. Although there was a statistical difference in the number of cases that had a greater response to the reverse norm for the truthfully diagnosed subjects there was no difference in those cases diagnosed as deceptive or inconclusive. This is unmistakable evidence that a deceptive person may well exhibit a greater response to the reverse norm question as often as he does to the dominant relevant. While this procedure may prove to be useful in correctly identifying the truthful, it could be devastating in failing to correctly identify the deceptive. There is no evidence that the reverse norm type

question creates any added value to the testing technique while there is demonstrable data that its evaluation may lead to an erroneous decision.

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# THE ART OF INTERROGATING RAPISTS

By

William F. Merrill

## INTRODUCTION

Interviewing and interrogation of suspects and subjects in criminal investigations is a critical skill in the successful resolution of crimes. This skill is one that must be improved upon and enhanced by study of the specific offenders and their personalities to be dealt with in different crimes. This paper deals with the various aspects that are pertinent when conducting interviews and interrogations of rapists. Both the individual and society play crucial roles in the techniques used in the interview and interrogation process.

Within law enforcement criminal investigations, and for this paper, two broad types of rapists will be considered, with both being distinct and each must be approached as such when using your investigative skills in obtaining their confessions. The two types of rapists that will be covered are the 'Contact Rapist' and the 'Sexual Aggressor Rapist.'

The 'Contact Rapist', as named by D.J. West (1987) in *Sexual Crimes and Confrontations*, was said to be relatively frequent, but rarely reported according to evidence from victim surveys at the time of his research. In today's society these types of rapists are a major issue and a concern, as these rapes are being more readily reported; however, research shows these crimes are for the most part not being reported to law enforcement authorities (State Council ... 1992). The most common is referred to as 'Date Rapes.' The Contact Rapist is usually the known offender, whether known through casual acquaintance or within business relationships. The area not to be considered under the realm of Contact Rapists is the Spousal Rapist.

The Sexual Aggressor Rapists, on the other hand, are the rapists who demand sex with force or threat, manhandling and hitting the victim if she resists; and they are usually the rapists who are more uninhibitedly aggressive and impulsively antisocial than the Contact Rapists (West, 1987). The Sexual Aggressor Rapist is most often seen as the Serial Rapist. The Opportunist Rapist will not be included in this paper, as their acts are a side result of another crime (burglary, robbery, kidnapping, etc.) and the Criminal Sexual Sadist will not be included in this paper, as their acts go beyond mere rape.

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## BACKGROUND

Before any contact is made with an alleged rapist, intelligence gathering must be completed. The investigator needs to start with the background and foundations of the offender's attitudes that lead up to the commission of the rape. The initial review of the case facts may provide some indications of the type of rapist involved. As previously mentioned, the Contact Rapist and the Sexual Aggressor Rapist are two separate and distinct types of individuals, but with some common threads. Determination of the type of rapist must be identified before applying any specific interview and interrogation techniques. Normally, the interview of the offender is the last step in a progression of interviews and other activities of the investigation (Hertica, 1991). The gathering of this information should be done as rapidly as possible to keep the suspect off balance and minimize the chances of his learning of the nature of the investigation. Such knowledge that the investigation is being conducted obviously gives him an opportunity to destroy evidence; threaten and intimidate victims, witnesses; and/or obtain counsel, who will undoubtedly tell him not to talk to the police (Hertica, 1991).

The Contact Rapist receives his development as a result of the teachings of society and can be characterized as a social personality in respects to today's societal norms. Part of the Contact Rapist's forming by society is that boys are expected to be independent, aggressive, competitive, strong and brave, with aggressive physical activity and games encouraged. Girls on the other hand are conditioned to be passive, dependent, accepting and polite. Expectations of sexual behavior are very different for males and females, with males learning to become sexually active at any early age and females discouraged from similar sexual activity. The responsibility for setting the limits rests with the woman and the man is taught that even though a woman appears to be reluctant, she actually wants him to overcome her objections and "sweep her off her feet." This false assumption that a woman doesn't know her own mind leads some men to use force or emotional blackmail to gain submission (Adams & Jones, n.d.). In the heat of passion he may temporarily disregard a woman's signals of unwillingness, or misinterpreted resistance as playfulness, or decided that she has no business to refuse him. The Contact Rapists are not conspicuously deviant either in personality or in sexuality. They may not consider themselves guilty of any great harm, with the borderline between forcible wooing and unacceptable aggression being somewhat fuzzy (West, 1987).

On the other hand, the Sexual Aggressor Rapist receives his development through deviant actions against society, and he can be characterized as an asocial or antisocial type personality. Particularly significant in the development histories of persons who commit sexual assaults is the high incidence of their having been sexually victimized themselves. The majority of Sexual Aggressor Rapists were once victims of sexual abuse. For the sexually victimized young male for whom sex is experienced as a way of being controlled or assaulted, one way of combating the experience of helplessness as the victim is to become the more powerful victimizer (Schlesinger & Rivitch, 1983). However, a review of statistical studies compiled by the Federal Bureau of Investigation Behavioral Sciences Unit and other law enforcement researches into this area, does not show that to be the single cause of the motivation (Scully, 1990).



## RAPE: THE ACT

The definition of rape is: An unlawful carnal knowledge of a woman, by force and without her consent. Penetration to the vagina need not be complete, only so slight of penetration, and sexual emission need not occur (MacDonald, 1971). But the definition of rape does not include the intent of the offender. For the interview or interrogation of rapists this will become an important part to be considered. To assess the type of rapist you are seeking for the rape being reported, Robert R. Hazelwood and Ann W. Burgess (1987) have formulated a series of 14 questions to ask the victim(s), to determine the behavioral aspects of the crime and criminal.

The Contact Rapist seeks the rape as completion of the initiated sexual contact. Emotionally coerced sex is not viewed as a crime; however, the line between physical force and emotional coercion is blurred. The use of alcohol or other drugs has been reported in many of these incidents of emotionally coerced sex. In these situations, men assign equal or almost equal responsibility for what happened to themselves and to the women. Often little remorse is felt by the man due to the pressures of sexual play (State Council ..., 1992). This act of sexual intercourse is the sexual conquest.

The Sexual Aggressor Rapist seeks to commit rape for other reasons. For this rapist, the act or rape is not for the sexual intercourse, but for the power and control over women. Repeated studies show this to be consistent throughout decades of analysis. To begin with, a majority of these rapists have sexual relationships with women, even up to the time of the rape (Scully, 1990). Many offenders have even noted the rape as lousy sex. A strong contributing action noted by various authors is the increasingly dominant role of women in today's society. Women are becoming more involved in the control structure of our society and are not remaining passive in their roles. Repeated studies of rape have shown the common motive for rape as feelings of hostility, anger, and a desire for power and dominance (Adams & Jones, n.d.). Another factor playing an important part in identifying this type of rapist is the planning of the assault, as a majority are premeditated rather than impulsive or opportunistic (Hazelwood & Warren, 1990). There are seven main themes in this type of rape investigation that must be kept in order for the interview and for the investigation to depict the true nature of this offender: victim selection, manner of approach, means of controlling the victim, the use of force, sexual dynamics of rape, verbal dynamics of rape, and post offense behavior (Burgess, 1991). A study of the traditional model of masculinity has shown that the convicted rapists who were interviewed, averaged on a scale of 20 (low) to 40 (high) of the Compulsive Masculinity Scale, ranged on an average of 29.4, not unlike other felons who scored 28.3 (Scully, 1990).

As indicated by the various behavioral aspects for both types of offenders, it can be immediately seen that the Sexual Aggressor Rapist has some very complex personality development, apart from the Contact Rapist, that must be taken into consideration before beginning the interview.

## INTERROGATING THE CONTACT RAPIST

Having reviewed the facts of the crime and found that the offender of the assault has given the investigator indicators of being a Contact Rapist, it is time to begin the interrogation. The basic theme for conducting the interrogation is the act is one that has gotten out of control from simple beginnings. This subject should not be handled in the same manner as the asocial criminal of society, but as a participant of a moral crime. The crime being that the woman has said "No," and he continued the sexual contact disregarding her requests, which is a rape. Tactics of interview, as all investigators know, should have nothing to do with biases or personal feelings on the crime or the victim, but the technique to get the facts. Because of the type of person this offender is, all approaches should be as a "Common Man" approach, as a social type personality with normal desires and needs.

A simple technique to start with would be by "Condemning his victim, upon whom some degree of moral responsibility might conceivably be placed for the commission of the crime in question." This interviewing technique would be a good starting point to inflect that the victim initially showed willingness and gave the wrong signals that the sexual contact was to be stopped. This type would be easy to establish rapport with from a masculine point of view by a male interviewer. Another technique would be "Reduce the subject's guilt by minimizing the moral seriousness of the offense" or to "Sympathize with the subject by telling him that anyone else under similar conditions or circumstances might have done the same thing." (Inbau & Reid, 1967). By these types of techniques the investigator is calling attention that the act of rape occurred by the offender continuing on after the victim had indicated discontinuance is not an unusual action, but rather one that occurs quite frequently to other people. Inbau and Reid pointed out that this technique has been particularly effective in sex crimes.

The bottom line of these techniques, and other techniques similar in nature, is to point out to the offender that the act is one that had gotten out of hand. This gives the offender an "out" (mentally putting some of the blame on the other party as being responsible) and that he is not being condemned as a scourge of society. The investigator still needs to continue the interview and have the offender admit that the "no" signal was given, whether the subject interpreted it correctly or not.

Care should be taken not to alienate this type of rapist by too harsh of treatment, as he feels that he has done nothing criminally wrong. This lack of criminal acknowledgement is the basis to get the confession by playing on the emotions of the act as the sexual conquest and not a violent act by use of force.

These offenders are the routine type of offenders investigators are going to come across most often in investigations. Most of these people can be approached by simply utilizing the common interview and interrogation techniques most investigators learned in basic law enforcement schools.

## INTERROGATING THE SEXUAL AGGRESSOR RAPIST

It is not easy, except as part of an intensive course in clinical interviewing techniques, to outline in detail exactly every procedure that could be employed in questioning the Sexual Aggressor Rapist. This individual has had quite some development in his patterns of behavior, as compared against the types of persons identified within the realm of the Contact Rapists. There are some attitudes the investigator needs to instill in himself to establish rapport with this offender to get him to confess. The interrogator of these offenders should not exhibit shock at the acts committed or by condemning the offender, which only will serve to alienate him.

Sexual Aggressor Rapist's personalities can be further described as "Unselfish" or "Selfish." The unselfish offender tries to get the victim involved, is personal to the victim, may be self-demeaning, apologetic, complimentary to the victim and often provides reassurance of non-harm. The selfish offender is threatening, profane, demeaning to the victim, humiliates the victim, is demanding, nonpersonal, offensive and abusive (Hazelwood & Burgess, 1987). These personality traits come into play, especially when formulating an interrogation technique themes dealing with emotional or nonemotional offenders (Inbau, Reid & Buckley, 1986). The categories of Sexual Aggressor Rapists, as developed by Groth, Burgess, and Holstrom (1977) and listed by Robert R. Hazelwood, to be discussed for interrogation are Power Reassurance, Power Assertive, Anger Retaliatory, and Anger Excitation.

The Power Reassurance Rapist can be considered the "Gentleman" rapist, who uses the approach tactic of surprise and is "unselfish" in personality towards the victim. In conducting the interrogation, using an approach acting upon him as an emotional offender should be effective, employing such techniques as "Reducing the suspect's feeling of guilt by minimizing moral seriousness of the offense" or to "Sympathize with the suspect by saying anyone might have done the same thing" (Inbau, Reid & Buckley, 1986). These techniques are aiming at the offender's troubled conscience, even though he has tried to justify the act to himself. Again, the offender can be given the theme that he is normal because of his obvious positive treatment of the victim.

The Power Assertive Rapist is recognized by his moderate to excessive force, and his words and actions tend to show a dominance over the woman in support of his masculinity. This offender probably used a con type approach and has displayed selfish traits towards the victim (Hazelwood & Burgess, 1987). In conducting this interrogation, effective emotional themes should include "Sympathize with the suspect by condemning others" or "Appeal to suspect's pride by well selected flattery" (Inbau, Reid & Buckley, 1986). This offender sees women as insignificant and sees himself as a man's man. Other themes should be centered around this offender's masculinity, playing on his ego that he is strong, independent, avoiding feminine things, self-reliant, etc. Getting the offender to brag by bolstering his ego is a positive tactic to develop your rapport (Othmer & Othmer, 1989).

The Anger Retaliatory rapist is recognized by his excessive force, displaying anger and intense rage. This selfish type personality is using sex as a weapon, getting even through the

victim, and is seeking to punish the victim. The offender probably used a blitz approach to obtain his victim (Hazelwood & Burgess, 1987). Nonemotional themes should be considered for this offender, as he has no remorse and is taking out his anger on the victim. Any of the nonemotional themes depicted by Inbau and Reid can be considered such as "Have suspect place himself at scene of crime or in contact with victim or occurrence" or "Point out the futility of resistance to telling the truth" (Inbau, Reid & Buckley, 1986). This rapist is a repeat offender, so if an approach such as condemning others is used, it may only get results for the present crime. The interrogator needs to use further techniques such as looping (go to another subject and then back door them at a different angle) to get past any of the offender's downplay on this incident and discover further past occurrences (Othmer & Othmer, 1989). But overall, the interrogator needs to take control of the interview, keeping the upper hand by presenting facts that link the offender to the crime, and play on the offender's anger. By a confrontation of facts type approach the interrogator uses behavioral clues and evidence to heighten the offender's anxiety to invite an explanation, that the interrogator can use to destroy any denials.

Finally, the Anger Excitation rapist is easily identified through the viciousness of the attack. This offender is very strict on pre-planning the rape by bringing his tools (ropes, weapons, etc.) to the scene and has considered all details from the attack through completion of his control over the victim. This offender is stimulated and gratified through physical and emotional pain inflicted upon the victim. This offender exhibits totally selfish traits and has absolutely no remorse in his actions (Hazelwood & Burgess, 1987). This is the least common type rapist to be encountered and is more in the realm of the Sexual Sadist. This type of rapist was mentioned at this point only to distinguish the more violent end of the spectrum of rape behaviors.

## CONCLUSION

Rape is a crime that is becoming more often reported in today's society, mostly because of current societal support of the victim, but it is still a grossly under reported crime. Another factor assisting in bringing these reports forward is the protection of the victim from the prior stigma of her being the cause. The investigator must be prepared to deal with these types of investigations and must also be aware of the types of offenders.

The Offender has varied and different motives for committing this crime, most often going beyond the sexual act, especially in the instances where rape is more often reported to the authorities. The investigator must look at the behavioral aspects of the commission of the crime and determine what type of offender committed the offense in order to successfully conduct an interrogation. Failure to recognize the behavior demonstrated by the crime leads to the failure of the interrogation by the investigator. Rapport can be gained by the interrogators paying attention to the keys the offender has provided in his commission of the crime. Remember, every offender has the right to confess!

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# **DEPARTMENT OF DEFENSE POLYGRAPH PROGRAM**

## **REPORT TO CONGRESS**

**for Fiscal Year 1994**

### **Abstract**

The Department of Defense (DoD) uses the polygraph in criminal investigations, counterintelligence cases, foreign intelligence and counterintelligence operations, and exculpation requests. This report contains numerous examples of polygraph utility in resolving counterintelligence and security issues as well as criminal investigations. The polygraph is clearly one of our most effective investigative tools.

In addition, about 62 percent of our polygraph examinations are conducted as a condition for access to certain positions or information under the DoD Counterintelligence-scope Polygraph (CSP) program. The purpose of the CSP Program is to deter and detect activity involving espionage and sabotage. In fiscal year 1994, the Department revised the relevant topics covered in the CSP examination to achieve reciprocity with the Intelligence Community.

The Department conducts CSP examinations on military personnel, DoD civilian employees, and DoD contractor personnel. Of the 10,742 individuals examined under the CSP Program in fiscal year 1994, 265 yielded deceptive, inconclusive or non-deceptive results with relevant admissions. Of the 265 individuals, 227 received a favorable adjudication, 19 are still pending adjudication, 7 are pending investigation, and 12 individuals received adverse action denying or withholding access.

The Department of Defense Polygraph Institute trains all federal polygraph examiners except those individuals employed by the CIA. The basic polygraph courses are taught at the Masters Degree level. The Institute also offers specialized courses in forensic psychophysiology through their continuing education program. In addition, the Institute conducts on-going evaluations of the validity of polygraph techniques used by the Department as well as research on new polygraph techniques, instrumentation, analytic methods, and polygraph countermeasures. The DoD research program is authorized by Public Law 100-180.

The Department of Defense continues to be the focal point for polygraph training and research in the federal government.

## I. DoD Use Of Polygraph Examinations

The Department of Defense has used the polygraph for almost half a century. It is used in criminal investigations, counterintelligence cases, foreign intelligence and counterintelligence operations, exculpation requests, and as a condition for access to certain positions or information. The polygraph is a tool that enhances the interview and interrogation process. Often it is the only investigative technique capable of providing essential information to resolve national security issues and criminal investigations. The use of the polygraph as a condition for access is limited by a statutory quota for Counterintelligence-scope Polygraph (CSP) examinations.

The following table reflects Department of Defense Polygraph Program statistics for fiscal year 1994.

Criminal	2,928	17.0%
Exculpatory	805	4.7%
CI Scope	10,742	62.5%
All Others*	<u>2,707</u>	<u>15.8%</u>
Total**	17,182	100%

\* Includes examinations conducted in support of personnel security investigations, counterintelligence and intelligence operations, and polygraph assistance to non-DoD federal agencies.

\*\* Does not include polygraph examinations conducted by the National Security Agency (NSA). A breakout of polygraph examinations conducted by NSA is contained in a classified table submitted with this report. Nor does it include polygraph examinations conducted by the National Reconnaissance Office, which are conducted under the authority of the Director of Central Intelligence (DCI).

## II. Fiscal Year 1994 Counterintelligence-scope Polygraph Examinations

Section 1121 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100-180, December 4, 1987: 101 Stat. at 1147) authorizes the Department of Defense to conduct Counterintelligence-scope Polygraph (CSP) examinations as a condition for access to certain information.

The purpose of the CSP Program is to deter and detect espionage and sabotage. Prior to fiscal year 1994, the CSP examination questions focused on whether the examinee had ever engaged in espionage or sabotage; had ever given or sold classified material to unauthorized persons or had been approached to do so; had ever had any unauthorized contact with a representative of a foreign government; or has ever had knowledge of anyone who had been involved in any of the above.

In fiscal year 1994, the Department revised the scope of CSP examinations in order to achieve reciprocity with the Intelligence Community. The following topics are covered during the CSP examination: (1) Involvement with a foreign intelligence/security service, involvement in espionage; (2) Involvement in foreign/domestic terrorism; (3) Unauthorized foreign contacts; (4) Deliberate failure to protect classified information; and (5) Damaging/sabotaging government information systems, clandestine collection, or defense systems. The standardization of the CSP ensures that all CSP examinations meet the needs of both DoD and the Intelligence Community so as to facilitate transfer of clearances.

Public law 100-180 authorized the Department of Defense to administer CSP examinations to persons whose duties involve access to information that has been classified at the level of top secret or designated as being within a special access program under section 4.2(a) of Executive Order 12356. This includes military and civilian personnel of the Department and personnel of defense contractors. The number of CSP examinations has been limited to 5,000 per fiscal year since fiscal year 1991. During fiscal years 1988 through 1990 the ceiling was 10,000. The quota reduction took place two years after new exemptions for cryptographic and reconnaissance programs were adopted. Public Law 100-180 exempts certain intelligence agencies and functions from the 5,000 quota: (1) individuals assigned, detailed or under contract with the Central Intelligence Agency, (2) persons employed, assigned, detailed, under contract or applying for a position in the National Security Agency, (3) persons assigned to a space where sensitive cryptographic information is processed, or stored, or (4) persons employed by, assigned or detailed to, an office within the Department of Defense for the collection of specialized national foreign intelligence through reconnaissance programs or a contractor of such an office.

The following table reflects CSP examinations conducted by the Department of Defense in accordance with Public Law 100-180.



### **CSP Examinations**

(1) Special Access Programs	2,711
(2) DIA Critical Intelligence Positions	1,198
(3) TOP SECRET	75
(4) Examinations for Interim Access to Sensitive Compartmented Information	2
Total Examinations Conducted Under the Congressional Ceiling	3,986
Exemption Examinations*	6,756
DoD Counterintelligence-scope Polygraph Program TOTAL**	10,742

\*NOTE: Includes detailees to CIA and NSA; assignees to cryptographic information processing spaces; non-NRO reconnaissance programs.

\*\*NOTE: Does not include polygraph examinations conducted by the National Security Agency (NSA). A table of polygraph examinations conducted by NSA is contained in a classified annex to this report. Nor does it include examinations conducted by the National Reconnaissance Office (NRO), which are conducted under the authority of the DCI. In previous years, examinations conducted by the NRO in support of DoD were included in the "Exempted Examinations" category.

### **CSP Refusals**

In Fiscal year 1994, only two persons declined CSP testing required as a condition of access to certain information. Department of Defense policy states those persons who decline to take the examination are denied access to the classified material in question, but are retained in their position or transferred to other positions in the organization of equal pay and responsibility, commensurate with the clearance level held before the declination.

### **Specific CSP Examination Results**

The polygraph examination results for the 10,742 individuals tested under the Department of Defense Counterintelligence-scope Polygraph Program are as follows:

Six hundred ninety-seven individuals required more than two series (a series is defined as the collection of at least two polygraph charts on an examinee). A total of 488 examinations required more than one day to complete.

There were 10,471 individuals whose polygraph examination results were evaluated as non-deceptive.

An additional 220 individuals made admissions relevant to the issues being tested, and through further testing, the examiner was able to resolve all relevant issues favorably to the subject.

Six individuals were, because of medical or psychological considerations, unable to complete the polygraph examinations, resulting in insufficient data with which to form an opinion.

For 6 individuals the polygraph examination results were evaluated as inconclusive, *i.e.*, after a review of the physiological data, it was not possible to determine whether the results indicated deception or non-deception.

There were 10 individuals whose polygraph examination results were evaluated as deceptive and who made no admissions to the relevant issues.

Twenty-nine individuals made admissions relevant to the issues being tested but continued to be evaluated as deceptive during further testing.

Of the 45 individuals whose examination results were evaluated as inconclusive or deceptive, seven received a favorable adjudication, 19 are pending adjudication, seven are pending investigation and 12 individuals received adverse action denying or withdrawing access.

### **Significant Information Developed**

The following cases indicate the most significant information developed during DoD Counterintelligence-scope polygraph examinations covered by this report. It should be noted that all these individuals had been interviewed previously by security professionals and investigated by other means without any discovery of the information obtained by the polygraph examination procedure. In most cases the information was elicited from the subject in discussion with the examiner.

An individual exhibited significant physiological responses to questions regarding the mishandling of classified information during his initial polygraph test series. During the posttest interview, the individual stated that he had classified material at his residence and subsequently returned 156 pages of classified information, including SECRET/NOFORN. He continued to verbally indicate indecision as to whether additional classified material was located at his residence. During a subsequent search of his residence, additional classified materials, to include computer disks, were retrieved and returned to government control for review. The individual admitted during later polygraph examinations that he disagreed with an article published in a Washington, D.C. newspaper. He thought a classified message he saw more accurately portrayed the situation. He copied that document, after removing the classification markings, and mailed it to the newspaper. The individual subsequently successfully completed the polygraph examination. He was released from his pending overseas assignment and was given a formal letter of reprimand, and his name was temporarily removed for the Lt. Colonel promotion list.

An individual, during CSP testing, admitted to inadvertently providing classified information to a foreign attache assigned to Washington, D.C. The individual also admitted that, during an overseas military assignment, he had official contact with military attaches and exceeded his authority in providing classified information or confirming same for some foreign attaches.

An individual, during the pretest interview, stated that in January 1994, while socializing with friends, he was asked for information which he knew to be classified by an individual who identified himself as being a member of a Foreign Intelligence Service.

An individual admitted during CSP testing that he provided classified information to Foreign Allies beyond what was authorized. He also admitted providing SECRET information regarding satellite imagery resolution rates to an uncleared high school friend. In addition, he stated that he had repeatedly taken classified information home and on temporary duty trips and failed to properly secure the material.

An individual admitted, during CSP testing, that he had provided a classified document to a foreign national embassy officer after being authorized to verbally apprise the individual of certain unclassified portions of the document. The individual took it upon himself to remove the classification markings from the document and provide it to the foreign national. Further polygraph testing resulted in additional admissions concerning wrongful removals of classified material.

An individual admitted, during CSP testing, to disclosing classified information to a family member concerning a classified project at the National Security Agency. He also admitted to cutting classified markings off of documents at the direction of his superiors in order for the documents to be disseminated to persons with lower clearances or placed in personal files.

An individual, during CSP testing, admitted to numerous security violations during the course of his career to include wrongfully removing classified documents from secure spaces;

leaving classified documents unattended in hotel and conference rooms; disclosing classified information to friends and relatives; cutting classification markings off of documents and sending them via unsecured fax; and currently having classified documents at his home. The documents were subsequently seized during a search of his home.

NOTE: These cases do not include NRO examinations.

### **III. Utility of The Investigative Polygraph**

During fiscal year 1994, DoD investigations obtained unique and significant information from interviews conducted with the aid of the polygraph. In all illustrated instances, the polygraph examination process produced significant security or criminal information which would not otherwise have been secured for the specific investigation. The polygraph examination process was also valuable in helping to establish the innocence of persons charged with serious infractions.

A civilian member of an intelligence agency showed deception on a polygraph examination regarding the unauthorized disclosure of operational/classified information and the theft of operational funds. During the examination, he admitted to stealing in excess of \$60,000.00 over a nine year period. He also admitted taking kickbacks from a car dealership to ensure that the dealer received the government business when his unit needed to purchase new vehicles. His government employment was terminated and his retirement account was seized to ensure the \$60,000.00 was repaid.

An Air Force member was accused by his 12-year-old stepdaughter of sexually abusing her. The member was interviewed and denied the allegation and agreed to undergo a polygraph examination. During the pretest interview, the member confessed to sexually abusing his stepdaughter. The member was convicted by a General Court Martial and sentenced to 18 months confinement.

A contractor employee being processed for a sensitive position was administered a counterintelligence and suitability scope polygraph examination. During the first examination, he reacted to several counterintelligence questions and a question regarding the falsification of his security forms. He was questioned about his reactions, but did not provide any information at that time. Subsequently he was reexamined and disclosed that he intentionally withheld information regarding his immediate family who were still residing overseas and contacts that he had with a known foreign intelligence officer. As a result of this information, the individual was not granted access to the program.

An investigation was initiated when a male civilian employee, at a facility in Bamberg, Germany, stated an unidentified masked man entered the facility and demanded money out of an open safe. The employee stated, when he started to lock the safe, he was knocked on the head unconscious. It was determined that \$1,400.00 in U.S. government funds were stolen. The

employee was treated for a neck injury and was admitted to a medical facility for 48 hours. An examination of the wounds revealed that they were not consistent with the assault as described by the employee. The employee maintained his statement concerning the circumstances of the robbery and consented to a polygraph examination. The examination results indicated deception. The employee subsequently confessed he stole the deposits from the facility and fabricated the story that he was robbed. Final disposition is pending.

During a personnel security investigation of a DoD contractor, information was developed that the individual, a president of a major manufacturer of security products for the Department of Defense, had sexually harassed two female employees, and raped another employee. The individual was interviewed and admitted to numerous extra-marital affairs but denied involvement in the allegations of sexual harassment and rape. During the pretest of the polygraph examination, he admitted to the rape and sexual harassment as alleged. He also admitted to raping another employee. This information was referred to local law enforcement authorities who are conducting an investigation regarding these matters.

A civilian dependent wife of a Navy member was suspected of causing the death of a 14-month-old child for whom she was providing child care. An autopsy showed the cause of death of being undetermined, however, listed manual strangulation as a possible cause. The dependent wife was administered a polygraph examination. The results of which indicated deception. During subsequent interrogation, she admitted holding the child's face down in a pillow for three to five minutes in an attempt to get the child to go to sleep. A Federal District Court found the dependent wife guilty of manslaughter.

An individual involved in a clandestine intelligence operation admitted, following polygraph testing, that he had provided intelligence, economic, and political information to a foreign intelligence officer. He further admitted that he was involved in the smuggling of gold into the United States and weapons into a foreign country. He also admitted that he was involved in an illegal conspiracy to steal money from drug traffickers which had been deposited in a foreign bank. Further investigation of this matter is pending.

Information was developed during the personnel security investigation of a DoD contractor that the individual had been investigated by civilian law enforcement authorities for reportedly sexually assaulting his seven-year-old daughter, who suffers from Downs Syndrome. The individual denied the allegations and agreed to undergo a polygraph examination. During the polygraph examination, he admitted that he had sexually assaulted his daughter. Action by the local child protective service agency is pending.

A cleared civilian employee, with access to Sensitive Compartmented Information, admitted that in the early 1980s he had inadvertently met with two East German intelligence agents. The information was obtained while he was undergoing his routine reinvestigation polygraph. The employee indicated that he met the intelligence officers in a West German bar on several occasions, but did not know that they worked for the East German government until he was informed of this fact by a U.S. military officer. He stated that he did not reveal any

classified material to the agents, but acknowledged that he failed to disclose the contacts to his government employer.

Several pay clerks with the Defense Finance and Accounting Service were suspected of creating false payments to retirees and then diverting those funds. A total of 62 suspected payments were identified with a total loss of \$275,000.00. A particular clerk's computer was used to create 10 of the fraudulent checks. She claimed that person(s) unknown must have used her computer, without her knowledge, after she logged in. During the pretest phase of the polygraph examination, she admitted to preparing three of the fraudulent payments. Testing could not be continued due to the examinee's mental state. The individual pled guilty in Federal District Court and was sentenced to four months incarceration, four months community service, three years supervised release and to pay \$5,762.50 in restitution.

During a personnel security investigation of a military member, information was developed that the military member had been investigated regarding the alleged trafficking in illegal drugs. The member did not list any involvement with illegal drugs on his personal history questionnaire. He was interviewed and admitted smoking marijuana one time in high school and denied any other involvement with illegal drugs. The member agreed to undergo a polygraph examination. The results of the polygraph examination indicated deception. Following the polygraph examination, he admitted to extensive use and trafficking of marijuana and cocaine over a five year period. He further admitted to participation in gang criminal activities such as assaults, thefts and illegal drug trafficking. Adjudication of the member's security clearance is pending.

An investigation was initiated when a pair of U.S. government owned night vision goggles, valued at \$6,000.00, was stolen from a storage room at Fort Davis, Panama. Investigation revealed the only keys to the storage room were located in a key control box. Examination of the key control box revealed it could be opened without a key. It was determined that only one of the eight occupants of the building in which the storage room was located was in the area during the time of the theft. The occupant, an Army member, consented to a search of his quarters. During the search, the stolen goggles were not located, however, other stolen Army property was located. The Army member stated that he intended to return the stolen property. He denied any involvement or knowledge in the theft of the goggles and consented to a polygraph examination. The polygraph examination results indicated deception. The Army member subsequently confessed to stealing the goggles, placing them in a container and having the container packed by his movers. Final disposition is pending.

An applicant for employment with a government agency was administered a full screening counterintelligence and suitability scope polygraph examination. While reviewing the security forms with the polygraph examiner, the applicant acknowledged that he misrepresented the facts of an arrest. He acknowledged that he had been arrested and convicted of rape and a weapons violation and was sentenced to spend three years to life in a state penitentiary.

Suspected foreign object damage was discovered in the engine intake of a multi-million dollar research aircraft involved with a special access program. A contractor employee was identified as a possible suspect and denied any involvement or knowledge of the suspected damage. He agreed to undergo a polygraph examination. During the polygraph examination, he confessed to placing the foreign object in the aircraft engine. Final disposition is pending.

A civilian merchant marine assigned to a U.S. Naval ship was suspected of raping a female merchant marine aboard the ship. The victim stated that the suspect entered her unlocked room without her permission and raped her. The suspect claimed that he knocked on the victim's door, was invited in by her, and after several minutes of conversation they engaged in consensual sexual intercourse. The suspect agreed to undergo a polygraph examination. The results of which indicated deception and the suspect admitted raping the victim. The case is currently pending in Federal District Court.

A civilian contractor was suspected of wrongful removal and possible compromise of classified material. He admitted to several violations and agreed to undergo a polygraph examination to verify his admissions. During the polygraph examination, he admitted to additional violations of wrongful removals of classified material and having classified material at his home. A subsequent search of his home resulted in the seizure of numerous TOP SECRET and CODEWORD material. The investigation is continuing.

During a personnel security investigation of a military reservist, information was developed that he had been charged with 10 counts of indecent liberties with a child, aggravated sodomy and related offenses. The military reservist, who was also a former school teacher, denied any involvement in acts of sexual misconduct with children. He agreed to undergo a polygraph examination. During the pretest, he admitted that he engaged in various sexual acts with between 10 and 20 juvenile females on numerous occasions over a three year period. Adjudication of the military reservist's security clearance is pending.

An investigation was initiated into the activities of a psychiatric hospital and its parent company. A psychiatrist, who was the clinical director of the hospital, had previously admitted to providing false statements and the theft of government funds. The psychiatrist was administered a polygraph examination and during the examination admitted exaggerating diagnoses, and keeping patients in the hospital over weekends as a means of maximizing profits for the hospital. He also admitted sending forged documents to the State Medical Board in order to obtain his medical license and stealing checks from the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) and cashing them. As a result of the investigation, the Government recovered \$372 million dollars from a national medical corporation. The psychiatrist was sentenced to five months incarceration, five months supervised release, 300 hours community service, court-ordered restitution of \$175,787.89 to CHAMPUS and a \$150.00 special assessment for having committed a fraud against the government.

Three individuals were administered polygraph examinations regarding injuries to a 10-month-old infant caused by the "Shaken Baby Syndrome". All individuals showed no deception

to the relevant questions. A baby-sitter was identified as a possible suspect but was unable to be administered a polygraph examination because she was nine months pregnant. When interviewed, the baby-sitter confessed to causing the injuries to the child. The baby-sitter has been indicted and is awaiting trial.

An investigation was initiated when an Army member was shot to death in his barracks room at Fort Riley, Kansas. The investigation identified the killer as another Army member at Fort Riley. This Army member identified another Army member as being with him when he committed the murder. This member was interviewed and stated that he tried to talk the other member out of shooting the victim and consented to a polygraph examination. The polygraph examination results indicated deception. The member admitted being a co-conspirator with the other member in the murder. Final disposition is pending.

Two Navy members were suspected of causing damage to equipment used to divert torpedoes away from the U.S. Navy vessel to which they were assigned. The damage was estimated in excess of \$40,000.00. Both members denied culpability and agreed to undergo a polygraph examination. The examinations resulted in clearing one of the suspects of any wrongdoing and the other suspect admitting having caused the damage to the equipment. The Navy member was found guilty at a Special Court Martial of wrongful destruction of government property. He was sentenced to 60 days confinement, reduced in grade, and fined \$1,000.00.

Approximately \$2,000.00 was reported stolen from an Air Force Commissary cash office. Numerous behavioral analysis interviews were conducted which identified six individuals with possible motives. These individuals agreed to undergo polygraph examinations. One of the individuals indicated deception during his examination. During the posttest interview, this individual admitted to stealing the money from the commissary. His U.S. Government civilian employment has been terminated.

A Navy member was identified as a suspect in providing weapons to known foreign organized crime personnel in the overseas location where she was assigned. She admitted illegally bringing a weapon into the country, however, claimed the weapon had been stolen during a burglary of her home. She agreed to undergo a polygraph examination and subsequently admitted giving the weapon to an individual she knew was involved in organized crime. Because of her TOP SECRET clearance and access to cryptograph information, she was administered a polygraph examination to determine if she had ever provided classified information to this person or anyone else. During the polygraph examination, she admitted bringing classified material home and showing these documents to this same individual. Final disposition is pending.

An investigation was initiated when the dead body of an Army member was discovered on Fort Riley, Kansas. The autopsy disclosed that the member's death was caused by sharp and blunt force trauma, and the manner of death was murder. It was also determined that the body was moved after death causing scratches to the body. The investigation revealed witnesses who identified another Army member stationed at Fort Riley, Kansas being with the victim during the approximate time of murder. The Army member stated that he was on restriction in his barracks



room and not with the victim as alleged. The Army member stated that he knew the victim had scratches on his chest because he was shown crime scene photographs of the victim. The Army member denied any involvement in or knowledge of the murder and consented to a polygraph examination. The polygraph examination results indicated deception. The Army member confessed to being a participant and implicated three other Army members in the murder. One Army member received a life sentence, one got an acquittal, and one is pending trial.

A Navy member reported his 18-month-old daughter had apparently been kidnapped from his on-base residence. He stated he last saw her in her bed the night of December 2, 1993 and in the morning on December 3, 1993 he discovered her missing. Initial investigation raised some suspicion that the Navy member was withholding information. He was administered a polygraph to determine if he had harmed or caused the disappearance of his daughter. The results of the polygraph indicated deception. He continued to deny culpability, however, he agreed to additional interviews. During the additional interviews, the Navy member admitted to causing the child's death. The Navy member was found guilty at a General Court Martial of involuntary manslaughter, making a false official statement; and obstructing justice. He was sentenced to nine years incarceration, a dishonorable discharge, forfeiture of all pay and allowances, and reduction in grade.

An investigation was initiated when information was received from the Bureau of Alcohol, Tobacco and Firearms, that an Army member stationed in the Military District of Washington, purchased 19 handguns from several different gun stores in the state of Georgia. Some of the handguns purchases by the member were recovered in the possession of other individuals by local police during traffic stops and the investigation of drug offenses. During the Army member's interview, he stated 12 or 13 of his handguns had been stolen from the trunk of his car. The member stated that he did not report the theft of his handguns because the perpetrator left a note on his car threatening his life if he reported the theft. The member denied that he sold any of his handguns and consented to undergo a polygraph examination. During the pretest, the member admitted to selling 16 of his handguns to nine different Jamaican civilians. The member also admitted that he lied about his handguns being stolen from the trunk of his car. Final disposition is pending.

#### **IV. Training and Qualification Standards for Department of Defense Forensic Psychophysiology (Polygraph Examiners)**

The Department of Defense maintains very stringent standards for polygraph examiners. The Department of Defense Polygraph Institute's basic polygraph program is the only program known to base its curriculum on forensic psychophysiology, and conceptual, abstract, and applied knowledge that meet the requirements of a master's degree-level of study. Candidates selected for the Department of Defense polygraph positions must meet the following minimum requirements:

1. Be a United States citizen.

2. Be at least 25 years of age.

3. Be a graduate of an accredited four-year college or have equivalent experience that demonstrates the ability to master graduate-level academic courses.

4. Have two years of experience as an investigator with a Federal or other law enforcement agency. Two years of comparable experience may be substituted for the requirement of investigative experience with a Federal or other law enforcement agency.

5. Be of high moral character and sound emotional temperament, as confirmed by a background investigation.

6. Complete a Department of Defense-approved course of polygraph instruction.

7. Be adjudged suitable for the position after being administered a polygraph examination designed to ensure that the candidate realizes, and is sensitive to, the personal impact of such examinations.

Employees of all federal agencies, except the CIA, receive their basic polygraph training at the Department of Defense Polygraph Institute. After completing the basic polygraph training, DoD personnel must serve an internship consisting of a minimum of six months on-the-job-training and conduct at least 25 polygraph examinations under the supervision of a certified polygraph examiner before being certified as a Department of Defense polygraph examiner. In addition, the Institute offers 16 different specialized courses in forensic psychophysiology. Between 300 to 400 students attend the specialized courses each year.

#### DEPARTMENT OF DEFENSE FORENSIC PSYCHOPHYSIOLOGISTS (Polygraph Examiners)

Fiscal Year	Average Number of Examiners	Attrition Rate
1988	235	14.5%
1989	261	10.0%
1990	270	6.3%
1991	269	14.9%
1992	269	17.8%
1993	254	17.3%
1994*	192	19.3%

\* Does not include National Reconnaissance Office (NRO) polygraph examiners. NRO polygraph examiners are included in the totals for fiscal years 1988-1993.

## **V. Polygraph (Forensic Psychophysiology) Research**

### **Department of Defense Polygraph Institute**

The Department of Defense Polygraph Institute (DoDPI) has three Congressionally mandated research areas: 1) evaluate the validity of polygraph techniques; 2) conduct research on polygraph countermeasures; and 3) conduct developmental research to improve polygraph technology.

#### *SMALL GRANTS*

The grant program continues to provide an excellent mechanism for funding grants relating to DoDPI research priorities. Of 11 proposals received in fiscal year 1994, DoDPI funded only three, as compared to 13 grants made in FY 1993. DoDPI rejected six proposals and held the remaining two for possible funding in fiscal year 1995. The number of grants awarded was restricted more by a lack of funds than by the quality of the proposals.

#### *INSTITUTE STUDIES COMPLETED IN FY 1994*

##### **Polygraph Computerization:**

*Accuracy of the Applied Physics Laboratory of John Hopkins University (APL/JHU) Polygraph Automated Scoring System (PASS) algorithm with mock crimes.* APL/JHU used a combination of verified and unverified field cases to develop their PASS algorithm. Using a mock crime study in which all test results were known, the Institute compared the accuracy of computer scoring against the accuracy of human evaluators. Both were equally accurate overall, but humans were better at detecting guilt and the computer was better at detecting innocence.

*Artificial neural networks.* Most computers operate serially, processing information one byte at a time, one after the other. The neurons in the brain operate in parallel, processing information in many locations simultaneously, then combining the results. Artificial neural networks are computer circuits that operate in parallel, emulating the brain.

The Institute developed an algorithm using artificial neural networks to analyze physiological data. This worked extremely well on the small number of cases available last year. This approach will be extended next fiscal year using more cases and a different test format.

*Fuzzy logic.* The Institute developed an algorithm using a new statistical approach known as fuzzy logic, to analyze polygraph results. In an experiment, the average accuracy was 86 percent. The sample size was small, so the work is being expanded in fiscal year 1995 to include the Zone Comparison Technique and a new format, Event Related Controls.

## New Measures:

*Brain waves:* Twenty subjects read true and false statements about themselves while their brain waves were recorded. All autobiographical statements elicited a characteristic brain wave known as the P300. Although the wave was slightly larger on the truthful statements, the difference was not enough for diagnostic purposes. Possibly the autobiographical significance of the information overpowered the veracity of the statements.

*Vagal Tone Monitor:* Vagal tone refers to a number of impulses traveling outward from the brain along the vagus nerve to the heart. The polygraph records reactions in the heart, blood vessels, sweat glands, and muscles used for breathing. The reactions are a product of messages from the brain. DoDPI is developing a new type of polygraph which would monitor both incoming and outgoing messages between the brain and other portions of the body. A computer would pull out complex interactions, revealing detailed information about brain activity underlying conventional reactions. Most of the new measures being explored relate to the brain's control of the cardiovascular and respiratory systems.

In the first phase, completed in 1994, DoDPI developed equipment and programs that reveal some of the brain's control of the heart rate. DoDPI is now evaluating the equipment before proceeding to the next phase in 1995.

*Cardiovascular measures:* The pressure in the polygraph's blood pressure cuff is uncomfortable. This limits the number of questions that can be asked on the test. One of our research goals is to replace the cuff with a more comfortable sensor which will be at least as accurate as the cuff.

*Cardiovascular indices of guilty knowledge:* DoDPI ran 10 subjects through a series of peak of tension tests, and analyzed a variety of cardiovascular measures. Based on these analyses, DoDPI developed a theory of how the cardiovascular system reacts when a person lies. This understanding will help us create more effective cardiovascular channels on new polygraphs.

*Comparison of arm cuffs and thumb cuffs:* DoDPI examined the thumb cuff tracing to see how similar it is to the blood pressure cuff. If it measures the same physiological information, it could be considered for replacing the blood pressure cuff. Twenty subjects were administered a numbers test. Correlations between the two types of cuffs were high on some subjects, but not on others. DoDPI concluded the particular thumb cuff used in this should not replace the arm cuff at this time because of design problems; it leaks excessively.

*Voice:* Forty-four persons were administered a numbers test. We digitized and analyzed various aspects of their voice responses. DoDPI found that no single measure could accurately detect deception, but multiple voice measures extracted from pitch information was useful. The polygraph was much more accurate (79%) than voice measures (37%).

### **New Testing Formats:**

*Test of Espionage and Sabotage (TES):* TES was developed to improve the accuracy of security screening. Four validation studies were started in fiscal year 1993 and three were completed in fiscal year 1994. The Institute found that the TES was significantly more accurate than the previously used Counterintelligence Screening Polygraph (CSP) examination, particularly in identifying deception. All DoD agencies have switched from the CSP to TES for security screening. Preliminary results from the fourth study, the TES field study, indicate that the amount of useful information being obtained from TES examinations is significantly greater than with the CSP examination.

*Event related controls:* In order to avoid some of the problems inherent in conventional control questions, DoDPI is developing a type of test in which the control questions relate to the matter under investigation. This provides two advantages. They don't invade a person's privacy, and they are more resistant to countermeasures because they are harder to identify as control questions. In fiscal year 1994, DoDPI conducted three studies using event related controls. The purpose was to collect physiological data for computer analysis. The first study demonstrated that computers can distinguish between guilty and innocent subjects. The two additional studies are providing more data for the computer programmers to work with.

### **Foreign polygraph use and Countermeasures:**

*Foreign polygraph use:* How many countries use the polygraph? How sophisticated are they with it? Where do they get their equipment and training? These questions arise when we assess the level and types of countermeasures we might encounter in our psychophysiological detection of deception (PDD) procedures.

The Institute published quarterly reports summarizing open-source information about foreign polygraph usage. Each report typically contains information about 15 to 20 countries. The Institute also continually updates a listing of over 50 countries having a polygraph capability. The current list includes foreign polygraph organizations, training centers, and manufacturers.

During 1994, the chief of the Institute's external research program, met with examiners from Russia, Estonia, Poland, Hungary, and Romania to discuss their use of the polygraph. The Institute also purchased a Russian-made computerized polygraph, and obtained a number of foreign books and articles on the polygraph.

*Translations:* During fiscal year 1994, the Library of Congress translated a Japanese textbook on the polygraph for DoDPI. They also translated selected portions of a Polish textbook on the polygraph. The FBI translated a Hungarian polygraph article and selected portions of a Yugoslav textbook used in a Croatian polygraph school.

*Countermeasure detection algorithm.* Can the computer tell when a person is using countermeasures? A spurious response deliberately manufactured by a guilty person on a control question may somehow be different than a genuine "lie" response on a relevant question. Using data DoDPI collected in two countermeasure studies, APL developed an algorithm which successfully identified the genuine and spurious responses. This line of work is continuing.

#### **Miscellaneous:**

*Expectancy effect:* If a person expects something bad to happen when he lies, does that make his lies easier to detect? The Institute conducted a study in which half the subjects expected to hear a loud noise when they lied. As predicted, they had bigger reactions when they lied than did people who didn't expect anything unusual to happen.

*Abnormal breathing patterns:* Some polygraph examiners have observed what appears to be a controlled breathing pattern on directed lie control questions in field screening tests. DoDPI conducted a preliminary investigation of this observation using 204 sets of charts from a mock espionage study. The charts included both directed lie controls and conventional probable lie controls. The results indicated that the breathing pattern occurred only rarely, and when it did occur, it did so with both types of control questions and with both innocent and guilty subjects. Additional research needs to be done on this subject.

*Comparison of two scoring techniques:* Criminal PDD examinations using control questions normally compare relevant questions against the greater of two adjacent control questions. Would accuracy be improved by comparing all relevant questions against the single greatest control question reaction on that chart? The FBI conducted such a study at the Institute, using a mock crime scenario. All data sets were scored both ways. The study found that when all relevant question reactions were compared against the control question with the largest reaction the innocent persons were easily cleared. Unfortunately, many of the guilty persons were also cleared. DoDPI concluded that it is better to use the adjacent controls because there were fewer false negative errors.

*Anxiety's effect on accuracy:* If a person is chronically anxious, does that affect the accuracy of his polygraph test? DoDPI examined both state (short-term) and trait (chronic) anxiety in a mock crime study. Guilty subjects who were highly anxious had larger reactions than low anxiety guilty subjects, but this had no effect on the accuracy of the polygraph examiner's decisions.

*Electrodermal reactivity and accuracy:* A person's degree of Galvanic Skin Response (GSR) reactivity can affect the test outcome. In a mock crime study DoDPI conducted, people with unusually flat GSR tracings were more likely to produce inconclusive results. This is probably because the GSR is normally the most productive channel, so when the GSR is largely flat the polygraph examiner has less biological information to evaluate.

*Inquiry vs. accusatory questions:* Normally, a polygraph examiner asks inquiring questions: "Did you commit that crime?" Would a guilty person react if he were asked an accusatory question: "You committed that crime, didn't you?" How would such a question affect an innocent person: These questions were studied in a mock crime experiment. DoDPI found the type of question asked had little affect on the overall accuracy rate.

*Ethics curriculum:* Ethics is a cornerstone for scientific and research endeavors. The Institute developed a graduate-level course on ethics for forensic psychophysiologicals. This course is available for practitioners who have completed the basic PDD course.

*Research data base:* Data bases are vital for research. The Institute created a computerized database of all 150 known English language validity studies. A total of 77 variables were extracted from the studies. These included such factors as whether it was a laboratory or field study, the type of polygraph examiners, type of subjects, what physiological measures were recorded, the specific test that was administered, how the physiological data was scored, and whether they were reviewed by another polygraph examiner. The factors were put into the database, giving us instant access to all validity studies involving any of those 77 variables. This sets the stage for a meta-analysis of the research, which would provide definitive answers to a number of questions about the effect of these variables on polygraph accuracy.

## *INSTITUTE STUDIES IN PROGRESS*

### **Computerization:**

*Identifi:* A commercially available consulting firm developed a means of inputting conventional, non-computerized physiological data into a computer for analysis. DoDPI sent the firm a number of data sets from previous experiments, in which DoDPI knew who was lying. DoDPI is awaiting the results of this analysis.

*Axciton field study:* The Institute is helping the FBI conduct a field study of the Axciton computerized polygraph. The purpose of the study is to evaluate the Axciton's performance under field conditions, and to compare the Axciton and PASS scoring algorithms against the decisions of the field polygraph examiners. DoDPI lent the FBI several Axcitons and wrote the protocol describing what data DoDPI needs for the study. The FBI is examining criminal suspects and sending DoDPI the physiological data, score sheets, and other information on each case.

### **New measures:**

*Brain waves:* The University of Ottawa is completing a study on brain wave changes during deception. They looked at changes that occur the moment a person recognizes each question.

*Cardiovascular:* The State University of New York at Stony Brook is comparing several ways of measuring blood pressure. They are comparing the plethysmograph and blood pressure cuff (which only record changes in relative blood pressure) to state-of-the-art devices which measure changes in absolute blood pressure. Knowing exactly how high a person's blood pressure is should increase diagnostic accuracy by giving us a standard against which to judge the significance of blood pressure changes during the tests.

*Voice changes:* In response to many queries about the commercially available Computerized Voice Stress Analyzer (CVSA), DoDPI bought one of those units, attended the CVSA school, and conducted the first of two studies comparing it to the polygraph. DoDPI conducted two numbers tests on each of 42 subjects. One test was conducted with the polygraph, the other with the CVSA, using the test format recommended for each. The results are being analyzed.

*Eye movements:* DoDPI is exploring the use of oculometric measures of deception, using equipment on loan from the manufacturer. It monitors changes in pupillary diameter, eye movements, and blinking. The device is being used by some California law enforcement officers to identify via eye movements driving impairment due to alcohol and drug use.

#### **New Tests:**

*Control questions:* control questions often cause people to feel that PDD examination procedures invade privacy. One of DoDPI's research goals is to develop tests that don't use that type of control question.

*Guilty Knowledge Tests (GKT) feasibility:* The GKT has long been advocated by scientists as a potential replacement for the control question test. This has not occurred, as many polygraph examiners believe the GKT could rarely be used. This study, being conducted by the inventor of the GKT, reviews the polygraph files of the Ocala, Florida Sheriff's Office to see how often the GKT could realistically have been used. In selected cases during the next year, the GKT will be conducted on a trial basis.

*Single Test Interview (STI):* This test is related to the Test for Espionage and Sabotage (TES). DoDPI developed a hybrid screening paradigm for testing real-life issues of cocaine use and felony convictions. The subjects were recruited from the general population and from a group of convicted felons. Ground truth was established by taking hair samples (for cocaine use) and records checks (for felony convictions). Based on admissions from the subjects, the new test format seems to be very accurate. DoDPI is awaiting the reports of the laboratory tests and records checks before publishing the final results.



**Foreign use and countermeasures:**

*Foreign use:* DoDPI is continuing to establish contacts with polygraph examiners in other countries, with emphasis on the former East Bloc. As a result, DoDPI is starting to receive a number of foreign polygraph publications and have identified many foreign articles they wish to acquire.

*Translations:* DoDPI is translating a Russian-language doctoral dissertation on the polygraph published two years ago in Estonia.

*Drug database:* DoDPI is reviewing the pharmacological literature to identify drugs which could present a countermeasure threat.

**Miscellaneous:**

*Statement verification testing:* The conventional practice with criminal suspects is to ask them, point blank on the polygraph test, "Did you commit that crime?" What would happen if, instead, suspects made a written statement denying they had committed the crime, and then were asked on during the PDD test, "Did you lie in your statement?" A pilot study examined this question, and found the statement verification testing is effective. A larger study is needed before policy decisions could be made about using this type of testing in the field.

*Repeated testing:* Little research has been done on what happens when a subject is tested several times on the same issue. DoDPI conducted a study in which subjects were administered a numbers test six times in a row, then return a week later for an additional six repetitions. Preliminary results indicate that the pattern of reactions was remarkably consistent during these tests. Additional studies are necessary to assess the effects of repeated testing.

*NATIONAL SECURITY AGENCY STUDIES COMPLETED IN FY 94*

*Polygraph Computerization*

APL/JHU completed work on an algorithm for scoring the Reid Modified General Question Test and has delivered it to NSA who has distributed it to various Federal agencies. It includes a rank order algorithm which ranks each question in order of responsiveness. The most responsive question ranks 100%; all others are ranked as a percentage of that.

*Study of Cognitive Arousal Levels*

The psychological literature indicates that differences may exist between cognitive arousals and emotional arousals. Some variants of the Relevant-Irrelevant test use a reverse norm question involving cognitive arousal, such as, "Do they call you Bill[?]," when the examiner's name is Ed, to determine a subject's capability of responding. This study examined the effectiveness of the reverse norm question to serve as a control against which the relevant question reactions could be compared. The researchers concluded that the reverse norm question is not effective as a control question and should not be used for scoring purposes.

*NSA STUDIES IN PROGRESS*

*Algorithm to Analyze Polygraph Results*

Development of an algorithm for the Relevant-Irrelevant (RI) test continues. NSA is contracting with a private firm to provide the physiological data, and the CIA is funding the algorithm development by APL/JHU. The RI formats in this study are those currently being used by NSA and CIA for screening applicants and employees. The project will take 18 months to complete.

\* \* \* \* \*

Investigation of a sexual abuse case, however, presents several difficulties not present in a homicide investigation. To begin with, homicide victims do not play dead, but children can lie about sexual abuse. Upon discovery of a body, qualified investigators are immediately involved in the investigation; conversely, the police are often the last to learn about an allegation of a child molestation. Because of this, by the time of officer conducts an interview, the victim is committed to the same account he or she has relayed to several other people (parents, teachers, social workers, etc.). Typically a homicide is a messy crime and is reported in a timely manner which allows for the collection of physical evidence. This is not so in most child sexual abuse cases (frequently there is no conclusive physical evidence of sexual abuse). In addition, homicide suspects tend to have a salient motivation to kill the victim. The motivations driving an adult to sexually abuse a child are frequently latent--even to the offender. As a result of these complications, even though the public expects the police to solve each reported incident of sexual child abuse, realistically speaking, without a confession, sexual abuse of a child is a much more difficult case to prove in court than a homicide.

### **The Psychodynamics of the Offender**

Child sexual offenders can be placed in two categories--pedophiles and non-pedophiles. The non-pedophiles engages in sexual behavior with children if there is an opportunity to do so, but does not have a sexual preference to children. On the other hand, a pedophile is any adult whose primary sexual attraction is to pre-pubescent children (generally between the ages of 0 and 12 years old). Most pedophiles begin as teenagers. Those who act out their fantasies exclusively with children are called "fixated pedophiles." If the adolescent molester develops a secondary, more appropriate sexual preference for a mate his own age, he is considered a "regressed pedophile." Typically the regressed pedophile will resume his sexual preference for children when he reaches the age of 25 to 30 years.

The underlying motivation for sexual contact with children is power and control. Psychologically pedophiles tend to be weak, insecure men who need to feel that they are loved and in control of a relationship. Since their self-esteem is low, they anticipate and experience failure in forming meaningful relationships with other adults. Consequently a child becomes someone whom the offender can manipulate and control in an effort to maintain his own self-esteem. As in most personality disorders, the individual's impaired through process develops a cure (sexual contact with children) which is actually counterproductive because the sexual contact with the child results in guilt feelings which serve to further lower his self-esteem. An addictive cycle begins when the offender attempts to renew his self-esteem through another sexual contact with a child which results in further guilt.

To reduce the guilt associated with his sexual behavior, the child sexual abuse offender will develop fairly predictable attitudes and beliefs toward his sexual preference. These, of course, become important to identify during a behavioral analysis interview and can be used during the course of interrogation. These beliefs are:

1. Sexual contact with a child does not injure the child; *e.g.*, it is a victimless crime like gambling or prostitution.

## Child Sexual Abuse Investigations

2. The child enjoys the sexual contact as much as the offender.
3. The sexual contact was motivated by some reason other than to demonstrate power and superiority. The offender believes these motivations are:
  - (a) for sexual fulfillment,
  - (b) as a result of affects judgement because of alcohol or drugs,
  - (c) to educate the child.
4. The offender believes that he is the victim because:
  - (a) the girl or boy came on to him and offered an irresistible temptation,
  - (b) his wife or girlfriend has not fulfilled him sexually,
  - (c) alcohol, or some other outside source (devil, stress, illness, upbringing) made him molest a child.

## Profiling the Offender

The lay-person's stereotype of the child molester is a dirty old man who is mentally deranged, or psychotic, probably gay and sexually frustrated. In a study of 148 child molesters conducted by Groth *et al.*, (1978), none of these characteristics were statistically supported. Seventy-one percent of the group were under the age of 35 (82% of the group were 30 years old at the time of their first known pedophilic offense). In 71% of the group, the offender and the victim knew each other at least casually (14% of the offenders molested a family member). Almost 50% of the offenders were married, and these offenders engaged in sexual activity with adults as well as children; the other half of the sample were true pedophiles in that their sexual contact was exclusively with children. Only 5% of this group showed clinical evidence of some psychotic process operating at the time of their offense. With respect to gender preference, 51% of this group showed clinical evidence of some psychotic process operating at the time of their offense. With respect to gender preference, 51% of the offenders selected only female victims, 28% selected only male victims, and 21% selected both male and female victims. These findings appear stable across time and geographic locations in that other, more current researchers have reported similar characteristics.

To present profile characteristics, sexual offenders will be divided into three subcategories: adolescent offenders, adult offenders, and incest offenders.

### ***Adolescent Offenders***

It is estimated that the number of adolescent offenders is increasing faster than other groups of pedophiles. This, of course, may be due to increased frequency of reporting these incidents as a result of public awareness. The average adolescent pedophile is 15 years old, white, and has an average intelligence. His average victim is a white female one year younger than the offender, and whom he has a casual acquaintance with. The sexual contact typically takes place indoors and involves the threat of the use of a weapon or personal injury.

### ***Adult Offenders***

The majority of adult pedophiles are male (90%), white, and have at least attempted marriage. Up to 30% of adult pedophiles have a record for juvenile sexual assault. Many adult pedophiles are outwardly religious and are compulsive workers (workaholics). One source estimates that 50% of adult pedophiles are alcoholics or drug addicts. Conversely, Groth reported that none of the 148 offenders he studied were addicted to an illegal drug, and 30% were alcoholics (1978). The adult pedophile will socially place himself around children--either through marriage, or occupations such as a school bus driver, teacher, day care provider, grade school janitor, scout leader, camp counselor, big brother, etc. Collecting and enjoying child pornography is also closely linked with the adult pedophile (Selcraig, 1985). Unlike the adolescent offender who may use physical force or threaten the victim with a weapon, the adult pedophile generally uses psychological and emotional threats to entice his victims and to keep the victim silent.

### ***Incest***

While incest is sometimes not considered a typical pedophilic act because the victim(s) are limited in number, the underlying dynamics, and of course the victim's age, make it appropriate to include in this discussion. David Finkelhor of the Family Violence Research Program at the University of New Hampshire speculated that between 2 and 5 million American women have been victims of an incestuous relationship. Two-thirds of incest offenders are not the biological father of the victim. Typically the offender is unemployed, or otherwise in a position where he is home alone with the daughter. The family tends to be isolated and maintains an overly religious environment with extreme authority residing in the father-figure (Swanson, *et al.*, 1984). The incestuous relationship generally starts out with sexually touching the child at a young age, and as the child matures, the sexual contact progresses to intercourse.

## **Conducting the Child Sex Abuse Investigation; Evaluating the Allegation**

When a child reports that he or she has been sexually abused, the investigator's first goal is to establish the probably truthfulness of the allegation. In a survey of 111 polygraph examinations conducted on subjects accused of sexual contact with a child, 55% were reported as deceptive, 28% were reported as telling the truth and 16% produced inconclusive test results (Gibson & Jayne, 1988). If the inconclusive results are split equally between truthful and

deceptive subjects, more than one-third of the sexual abuse allegations were not supported by polygraph results. The variable which most closely correlated with apparent false allegations of sexual contact was an allegation made in conjunction with a divorce or custody dispute.

In a different study conducted by McCormick and Gidge in 1984, a review of 87 polygraph examinations administered to rape suspects found that 37% were reported as telling the truth. Forty-four victims who filed a sexual assault complaint were also given a polygraph examination. From the sample of victims, 20% were reported as not telling the truth (78% of those "victims" confessed to making up the charge). As a result of the limited surveys and general information in the literature, it would appear that about one-third of the allegations of sexual abuse by children are unfounded.

Doubting the truthfulness of a child who claims to be sexually abused, however, is not accepted by the general public. As Cagle and Gallagher charge, "One of the misconceptions law enforcement officers have traditionally accepted include believing that a child could lie about sex abuse" (1987). Because of the devastating emotional consequences which can result if a child who is telling the truth perceives that an investigator does not believe him or her, it is suggested that the truthfulness of the child's allegation be evaluated based on factual analysis, rather than any type of accusatory questions. The following factual guidelines are suggested:

1. A child who is unable (or reluctant) to name the person who assaulted her is probably telling the truth.
2. If a child has physical evidence of abuse (bruises, vaginal or anal trauma, sexually transmitted disease, foreign object found in vagina, etc.) the child certainly was assaulted. However, the investigator should realize that under the circumstances the child may still lie about who is responsible for the assault (either out of fear, or to protect a loved one).
3. The child who displays behavioral changes typical of a victim is more likely telling the truth when making a sexual abuse allegation. Examples of these behavioral changes are an increased interest in sex, withdrawn behavior, decreased interest in school or social activities.
4. The child who first reports the allegation to a non-family member (teacher, priest, or neighbor) is more likely telling the truth.
5. The child who spontaneously remarks that the sexual contact was supposed to be a "secret," or remarks that the offender made some type of threat to her if she ever told anyone what happened is more likely truthful.
6. The investigator should be suspicious of a possible false claim of sexual abuse if:

(a) a family member (mother, aunt, grandmother) is claiming that the child reported sexual abuse to them, but the child is unable to corroborate the conversation,

(b) the allegation was first made in connection with a divorce, separation, or custody dispute,

(c) the child names one person in particular (father, teacher, neighbor) and shortly before the allegation, the individual named was involved in a conflict with the child (discipline, refused permission to do something, etc.),

(d) a young child relates a very fluid and descriptive account of the assault during which time the child does not express fear, embarrassment, ambivalence, or guilt.

### **Interviewing a Suspect**

There are two types of suspects who may be interviewed in connection with a claim of sexual abuse of a child. The first of these would be a suspect who was specifically named by the child, and the second is the suspect who was not named by the child. We will illustrate possible questions to ask during a behavioral analysis interview of both types of suspects. In the first case, an 8-year-old girl named Gloria is accusing her stepfather of entering her bedroom and putting his finger inside her vagina while she pretended to be asleep. The following are possible interview questions:

- \* "What is your understanding for the purpose of the interview today?" (Purpose)
- \* "My understanding is that Gloria is saying that two weeks ago you entered her bedroom and put your finger in her vagina. Tom, you should realize that if in fact you did do that, our investigation will clearly indicate it and you should tell me that now." (History/You)
- \* "Why do you think Gloria is saying that you did this to her?" (Credibility)
- \* "Is Gloria lying when she says that you touched her bare vagina?"
- \* "Have you ever fantasized about touching Gloria's vagina, even though it is not something you would actually do?" (Think)
- \* "Tell me why you wouldn't touch Gloria's vagina?" (Why not)
- \* "What do you think should happen to Gloria for saying this about you?" (Punishment)
- \* "In my line of work I have talked to hundreds of fathers who have done something sexual with their daughter or step-daughter. How do you feel toward those people?"

\* "What do you think should happen to a father who did touch his step-daughter's bare vagina?" (Punishment)

\* "Why do you think some fathers would do something like that?" (Motive)

\* "Would you be willing to take a polygraph test regarding whether or not you did touch Gloria's bare vagina? When the examiner asks you on the polygraph, 'Did you touch Gloria's bare vagina?' you're going to answer 'no' to that question, right? What will the polygraph show on that question?" (Polygraph)

\* "What has been your wife's reaction to this allegation?" (Loved one)

\* "Who do you think your wife believes the most--you or Gloria?"

In addition to the above behavioral analysis questions, the following factual analysis questions should be considered:

\* "Describe for me what kind of person Gloria is."

\* "How would you describe your relationship with Gloria?"

\* "How much do you think Gloria knows about sex?"

\* "Has she asked you any questions about sexual matters?"

These questions are to develop possible theme material for interrogation. If the suspect, for example, described his relationship with Gloria as being very close, and that she was knowledgeable about sexual matters, or talked to the suspect about sex, each of these points could be incorporated into a theme which described the sexual contact occurring because of Gloria's curiosity about sex.

\* "The date that Gloria said this happened was June 16th. That was a Friday night. Do you remember that night?"

Once the suspect acknowledges remembering the night of the incident, the investigator, would have the suspect relate his activities starting, perhaps, at 5:00 P.M. until an hour or so after the assault took place. The suspect should be specifically questioned about entering Gloria's room for any reason, after she had gone to bed, whether or not he had anything to drink that night, whether he masturbated that night or watched any video tapes or movies. Again, this information is for interrogational purposes, where possibly alcohol could be blamed for affecting the suspect's judgement, or that the suspect was sexually stimulated from a movie, or masturbation, and acted out of impulse.

The second interview possibility is of a suspect who is not named by the victim. As statistics indicate, this interviewing process should start with people who have regular access to



the victim. Eventually the investigation may expand to known offenders. It should be emphasized that a child may report a bona fide sexual abuse, but lie about knowing who assaulted him or her. Under this circumstance the investigator should carefully question the child about the location of the abuse (her home, school, church, etc.). It is highly improbable that a pedophile would wander into a building to assault the victim. On the other hand, an abduction which occurred on the way home from school, for example, is an unlikely MO for an offender who has regular access to the victim, and acquaintances of the victim are not likely suspects. The following interview questions are suggested to investigate a claim made by a 9-year-old girl named Gail. The allegation is that a man at school exposed his penis to Gail and asked her to touch it. She ran away from the man and her mother overheard her telling a friend about it. Gail denied knowing who the man was. The school janitor became a suspect because he has worked at this school for only two months. Behavioral Analysis Questions:

\*"What is your understanding for the purpose of this interview?" (Purpose)

\*"Gail Jones, one of the students at school, reported to us that a man exposed his penis to her earlier this week. You should realize that if you did this our investigation will clearly indicate that and you should tell me now." (History/You)

\*"Do you know for sure who did do this?" (Know)

\*"Who do you suspect might have done this?" (Suspicion)

\*"I'm sure you have gotten to know some of the employees at the grade school. Are there any of them that you feel you know well enough to say for sure that they didn't do this?" (Vouch)

\*"Who knows you well enough to be able to tell me that you didn't do this?" (Vouch for you)

\*"Do you think the person who did this is an employee at the school?" (Opportunity)

\*"Have you ever fantasized about showing your penis to a girl, not that it is something you would do, but more like just a daydream?" (Think)

\*"Tell me why you wouldn't expose your penis to a school-girl?" (Why not)

\*"What do you think should happen to the man who did expose his penis to Gail?" (Punishment)

\*"Under some circumstances, do you think the man who did this should be given some consideration?" (Second chance)

\*"Would you be willing to take a polygraph examination regarding this incident? What will your polygraph results be?" (Polygraph)

In addition to these behavioral analysis questions, the investigator would also question the janitor about whether he knows who Gail is, whether or not he talked to any girls that day, was alone with a school-girl that day, and whether he was in the vicinity of where the exposure took place. In both of the previous cases, the investigator could consider asking the suspect a bait question. The following section offers suggestions of possible bait questions to use in sexual abuse interviews.

### **Bait Questions for Sexual Abuse Interviews**

A bait question is one which suggests possible evidence which may link the suspect to the crime or to the crime scene. There are two important procedures to keep in mind when using a baiting technique. The first is that the bait question should be asked after the suspect has committed himself to the appropriate denial within the area of activity that the bait question is based on. The reason for this, of course, is that the bait question is intended to tempt the suspect to change his story, and to do that he first has to tell his story. If, for example, a bait question suggested that a witness could place the suspect and victim together, if the suspect acknowledges that he was with the victim in response to that bait question, this does not mean as much behaviorally as if the suspect initially denied being with the victim, and following the bait question, changed his answer.

The second concept associated with the use of a bait question is that the investigator should not expect the deceptive suspect to typically change his answer. Rather, the investigator evaluates the suspect's verbal and non-verbal behavior when denying the implication of the bait. A deceptive suspect may hesitate, break gaze, shift in the chair, qualify his response, etc., when answering the bait question. A truthful suspect, on the other hand, typically will provide a direct and confident denial and refute that such evidence might exist.

### ***Hypnosis***

"Joe, it is very common in cases like this for the child to undergo hypnosis to assist her recall of the incident. A couple of weeks ago, for example, a child who initially was unable to remember anything about what the man who exposed himself to her looked like, was able to give a complete description while under hypnosis. If Julie were to be hypnotized, is there any reason that she would describe you? Now that doesn't necessarily mean that you did this. Maybe you were with her shortly before or after the incident. Is there any reason you can think of for why she might describe you?"

### ***Genetic Fingerprinting***

"Dan, a technique we have used over the last 10 years to help resolve cases like this is called genetic or DNA fingerprinting--you probably have read about this in the papers. What the technique involves is simply matching chromosomes between body tissues, like semen, blood, hair, or skin flakes, found at the scene of a crime to the person who may be a suspect. Now we have taken the sheets and bed clothes from Linda for analysis, and what I'm wondering, Dan, is whether or not there may be any of your body tissue on that material. That doesn't necessarily

mean that you had sex with Linda. Maybe your semen (hair) got there some other way. But do you think that test will show that any semen (hair) found there will match yours?"

### ***Hair Analysis***

"Lou, one thing that we will do in a case like this is to vacuum the area where this exposure allegedly occurred. What we frequently find is that when a man does expose his penis, he will leave pubic hairs at the scene. These can be microscopically matched to the person who left them. Now is there any reason that we might find any of your pubic hair at the location where Gail said this happened? That doesn't mean that you were the person who exposed himself to her. Maybe while you were completely alone you scratched your penis, or tucked in your pants and left pubic hair for that reason. But can you think of any reason why we might find your pubic hair at that locations?"

### ***Video Tapes***

"Jim, because we have had a number of reports of this nature occurring in the schoolyard, about three weeks ago we set up a surveillance van which is constantly monitoring the vehicles and people who are near the schoolyard. Is there any reason why, after reviewing those video tapes, that you or your vehicle would have been videotaped? Now that doesn't mean that you are the person who is responsible for these incidents. Maybe you parked by the schoolyard for a different reason and forgot about it until now. Thinking back over last week, can you remember being at the school yard at all?"

## **Interrogation of the Sexual Abuse Suspect**

It is much easier for a suspect to admit an act of sexual contact with a child if the suspect is allowed to couple his admission with reasons which psychologically or morally excuse his behavior. These reasons, which we refer to as themes, are presented as a monologue by the investigator during interrogation.\* It should be made clear that the following themes represent the offender's own misinterpretation of the motives behind his behavior, and we are certainly not suggesting that the victim, a wife, or alcohol are responsible for the pedophile's sexual behavior.

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\* For additional information about presenting and developing interrogational themes see Inbau, F., Reid, J. & Buckley, J. (1986) *Criminal Interrogation and Confessions*, 3rd ed., Williams and Wilkins.

### **Themes Which Blame Someone Other Than the Suspect**

A common theme for pedophiles is to blame the victim, particularly if he or she is 12 years of age or older. The victim may be described as being sexually advanced for her age, sexually curious, or behaviorally sensual. The basic theme is that the victim approached the suspect, or that the victim did or said something which led the suspect to believe that he or she was interested in sexual contact. If the victim is acquainted with the suspect, it is effective to tell the suspect that, "She gave you these signals dozens of times and you did not act on them; but on the day in question, she was so persistent that you gave in, against your better judgement." Especially in cases of incest, it may be effective to blame the child for instigating and continuing the sexual relationship. "The first sexual contact," the investigator would explain, "was incidental and the child misinterpreted it. But after that one experience, the child threatened to tell your wife about it unless you went further and further with her. The more times you had sexual contact with her, the harder it became to break off the relationship--in essence she was blackmailing you because of one mistake that occurred probably years ago."

In another situation, it might be appropriate to place blame onto the victim's parents or the school system. The following illustrates that theme: "Bill, the reason we are seeing so many of these types of cases lately is that parents and the school system are not taking the responsibility to teach children about sex. Back when you and I were growing up, our father would sit down with us and explain about sex. But today, parents expect the school to teach sex education, and the school doesn't offer enough detailed information because they are afraid of a law suit. What I think happened in this case is that because Susie was curious about sex, and because she trusts you and enjoys your company, she started asking sexual questions. During that conversation you may have found yourself getting aroused and she noticed that and maybe reached down to touch your penis. One thing led to another and this thing happened."

The suspect's wife or girlfriend can also be blamed for not fulfilling him sexually. The theme might go like this: "Dave, each man has a biological sex drive that is located in the same part of the brain which regulates breathing and heart rate--we have no more control over sexual impulses than we do over our blood pressure. When a man is deprived of sexual relief, eventually he will seek fulfillment from somewhere, even though he knows that it may not be right. What I think happened here is that your wife (girlfriend) failed to fulfill you sexually--sometimes woman withhold sex as a way to get even with a man. What she didn't realize is that by not satisfying your biological and emotional needs, she caused you to do something against your better judgement."

### **Themes Which Blame Alcohol or Medication\***

\*If this type of theme is used, after the suspect's first admission of contact, he should thoroughly detail his actions and thoughts at the time of the assault to demonstrate that he was fully aware of what he was doing.

Because sexual contact with a child is embarrassing for the suspect to acknowledge, he is usually receptive to the idea that his judgement was affected because he was drinking, or because of prescribed medication. The elements of this theme would be: "Mark, you mentioned that you were drinking that afternoon, and also that you had recently started a blood pressure medication. I'll bet that 90% of the men I talk to who have done something like this never would have found themselves in the situation they were in if it hadn't have been for the fact that they were drinking. You know of course, that alcohol changes a person's body chemistry, and weakens our resistance to temptation. Now you mentioned before that you have fantasized about touching a boy's penis and that you were always able to control those fantasies. But the combination of the alcohol and the blood pressure pills, both of which changed your body chemistry and made it very hard to control impulses, made you do something that under normal conditions you never would have done."

### **Themes Which Minimize**

A common misconception and rationalization of the pedophile is that his sexual contact in no way harmed the child. For this reason the investigators should reinforce in the suspect's mind that what he did was not a rape, and that the child was not injured. In fact, in cases where the child does not report the incident immediately, the suspect can be told that the reason the child did not report the incident is because the experience was enjoyable and educational. If it were not for the child's mother, teacher, social workers, etc. who made her talk about this, the child never would have brought it to anyone's attention. The following illustrates a theme which minimizes the injury to the child: "Art, I don't think that this was something you did to try to hurt or upset Julie, and I certainly don't think that there was any force involved here. I think that if she had tried to hit you, or if she screamed, you would have stopped right then and there. But she never gave you a single indication that she didn't want to do it, did she?"

Another possible minimization theme is to describe the suspect's intentions behind the sexual contact as honorable. For example, "Mike, I don't think that this thing happened for your own sexual fulfillment--as you said before, you get all the sex you need from your girlfriend. I think that you have a mature understanding about sex and realize that it is a pleasant and enjoyable experience, not something perverted or dirty like some people are trying to say. Because you cared about Cindy, and knew that she was a little down that day, I think you just wanted her to have a pleasant and enjoyable experience."

### **Alternative Questions for Pedophiles**

The alternative question is the impetus the interrogator uses to elicit the first admission of guilt. The questions presented to the suspect contrasts an undesirable choice (which is, in all probability, not true) to a more understandable, and desirable choice. The suspect, of course, is encouraged to accept the "positive" side of the alternative question. When selecting an alternative question, the investigator should keep in mind that even though the suspect may be under investigation for one incident, it is very probable that he is guilty of many unreported or

unresolved offenses. For this reason, the investigator should avoid using an alternative which contrasts having sexual contact with one child versus many children, *e.g.*, "This is just the first time something like this happened isn't it? You haven't done this to other children have you?" The following alternative questions therefore, are suggested to encourage the suspect to make his first admission of sexual contact:

1. "Did you threaten her with a weapon like a gun, or hit her at all during this, or was she letting this happen? I can't see you forcing her into this; I'll bet she was going along with the whole thing, wasn't she?"
2. "Did you do perverted and disgusting things with her or just touch her? You didn't do anything perverted do you? It was just touching wasn't it?"
3. "Have you been having sex with your daughter since she was five or six years old, or was she a lot older than that the first time? I don't think you are the kind of person who would do something like this unless your daughter was mature enough. She was older than six years the first time this happened, wasn't she?"
4. "Did you have sex with your daughter every night, where this was a regular occurrence, or did it just happen when she was in the mood, maybe a couple of times a month. If you had sex with her every night, I think that is taking advantage of her. But if it was just when she wanted it, that's different. You didn't do this every day with her, did you?"
5. "Is this something which was all your doing, where you approached him, and you instigated the conversation and touching, or did he partly suggest this, maybe in his manner or by something he said. I'll bet he gave some sort of sign to you that this was alright, didn't he?"
6. "Is this something that you feel you have no control over, and that it could happen to you at any time? I think that this thing happened because you were drinking and lost control for just a minute. Under normal circumstances you never would have done something like this, would you?"

\* \* \* \* \*

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**THE AMERICAN POLYGRAPH ASSOCIATION RESEARCH CENTER**  
**IN THE DETECTION OF DECEPTION**

**History, Operations and Activities**

**By**

**Frank Horvath, Ph.D.**

The American Polygraph Association was established in 1966 and its membership and influence grew dramatically over the years. In spite of tumultuous periods in its history, primarily as a result of United States congressional prohibitions of certain forms of polygraph testing, the APA emerged even stronger and continues today to be the leading professional association of its kind. It is the world leader in the improvement of the field of polygraph testing through:

- \* **professional education**
- \* **advanced training, and**
- \* **progressive scientific research**

Although there was early recognition of an inherent interest in promoting, assisting in and conducting scientific research, it was understood that the APA's limited funds could not support all of the critical undertakings that were necessary. Yet because of its strong commitment to this issue, the APA determined that funding would be most productively engaged if used to support research by graduate students who would work under close supervision in traditional academic circumstances. In order to accomplish that objective, the American Polygraph Association and the School of Criminal Justice at Michigan State University established the APA Research Center. Since its beginning, the primary purpose of the Research Center has been to encourage graduate students, particularly those engaged in study for a Masters degree in Criminal Justice, to carry out research in areas related to polygraph testing that are of interest to the APA and, more generally, to all of those who practice this specialty.

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Dr. Horvath is Director of The APA Research Center and Professor, School of Criminal Justice, Baker Hall, Michigan State University, East Lansing, MI 48824-1118. Dr. Horvath is past president, past chairman of the Board, and currently an elected member of the Board of Directors of the APA. He is an Associate Editor and prior contributor to this journal. (Ed.)



Each year the APA provides a grant to Michigan State University, School of Criminal Justice, to support the Center's activities. The work carried out under the auspices of the Research Center is supervised by Frank Horvath, Ph.D., a Professor in the School of Criminal Justice. Although the Directorship of the Center is not compensated by the APA or the School of Criminal Justice, graduate student efforts are supported by the Center's funds.

Generally, the Center's funding is used in the following way: Of the grant annually given to the university, a fixed percentage (an amount negotiated at the time the Center was founded) is used by the university to support overhead costs. For this, the Center is provided an office space for storing the Center's materials and research data, a telephone, and office equipment. The office is used primarily by the student or students who are hired by the Center to perform clerical and research related tasks. Generally, each academic year a graduate student (or students), who declares an interest in research on a pertinent topic, is offered a Graduate Assistantship. In return the student agrees to conduct research and prepare an M.S. thesis, after the chosen topic has been approved by Dr. Horvath and the APA Board of Directors. The topic will vary from year to year and, in some cases, may be sufficiently large in scope to encompass more than a single year commitment. Once the topic has been approved, the student prepares a proposal detailing the methodology to be used in the research. This proposal must be approved by an independent committee of faculty members at Michigan State University in accordance with all university regulations before the research project commences.

The Graduate Assistantship is an award paid exclusively by the APA's grant and the stipend amount is fixed by university regulations. Graduate assistant costs vary with the time of appointment, and generally are on a 1/4 time (10 hours/week), 1/2 time, or 3/4 time basis. Stipends are set by the university and are not negotiated each year with the Center. The student's stipend and research costs are paid out of the funds granted to the university by the APA. After payment of those costs, the balance of the Center's funds is used to support the purchase of necessary equipment and supplies (e.g., computer supplies, paper, program updates, telephone) and copy, printing, and computer analysis services, as required. Generally, all costs related to a student's research are covered by the Center; this includes thesis typing, printing, and binding services. In those instances in which a project results in a publication or a conference presentation, preparation costs are also paid out of the Center's funds. Travel and conference registration costs, however, are not supported.

Since its inception the Center's research has provided the basis for a number of paper presentations at APA, criminal justice, and related conferences. In addition, a number of the Center's projects have resulted in published reports in a variety of journals. A compilation of these projects and their disposition are indicated below:

**Conference papers:**

*Blind evaluation of field polygraph charts: The effect of case type and evaluator characteristics.* (July, 1984). Paper presented at American Polygraph Association, Nashville, TN.

*An experimental evaluation of the effectiveness of control question testing with exclusive and non-exclusive control questions.* (July, 1984). Paper presented at American Polygraph Association, Nashville, TN.

*Polygraph research review.* (July, 1984). Symposium chair, American Polygraph Association, Nashville, TN.

*The attitudes of applicants toward pre-employment polygraph testing.* (August, 1985). Paper presented at American Polygraph Association, Reno, NV.

*Control question polygraph testing: The relative effectiveness of two technique variations and two types of control questions.* (August, 1986). Paper presented at American Polygraph Association, Smuggler's Notch, VT.

*Assessing laboratory-based research in detection of deception.* (August, 1986). Paper presented at American Polygraph Association, Smuggler's Notch, VT.

*Toward an understanding of research on polygraph testing: A primer in research methodology.* (August, 1987). Paper presented at American Polygraph Association, Ft. Worth, TX.

*An analysis of the relative effects of gender and type of control question in two variations of field control question polygraph procedures.* (August, 1987). Paper presented at American Polygraph Association, Ft. Worth, TX.

*What's new in polygraph research.* (August, 1987). Panel presentation, American Polygraph Association, Ft. Worth, TX.

*Issues and controversy in the use of polygraph testing in police organizations.* (October, 1987). Paper presented at Midwest Criminal Justice Association, Chicago, IL.

*The assault on polygraph testing: Implications for the private security field.* (April, 1988). Paper presented at the Academy of Criminal Justice Sciences, San Francisco, CA.

*Technique differences in laboratory detection of deception research.* (August, 1988). Paper presented at American Polygraph Association, Miami, FL.

*The effect of psychopathy in laboratory detection of deception research.* (August, 1988). Paper presented at American Polygraph Association, Miami, FL.

*Global analysis: Its implications for the effectiveness of control question testing in field settings.* (August, 1988). Paper presented at American Polygraph Association, Miami, FL.

*The sacrifice relevant question: An empirical examination of effectiveness and assumptions.* (August, 1988). Paper presented at American Polygraph Association, Miami, FL.

*Evaluation of research findings in the physiological detection of deception: An overview of laboratory and field models.* (October, 1988). Paper presented at Midwest Criminal Justice Association, Chicago, IL.

*Recent advances in research in detection of deception.* (October, 1988). Session Chair, Midwest Criminal Justice Association, Chicago, IL.

*The validity of police polygraph examiners' field decisions of truthfulness and deception.* (February, 1989). Paper presented at American Academy of Forensic Sciences, Las Vegas, NV.

*Field polygraph examinations and assessments of accuracy: Recent findings.* (October, 1989). Paper presented at Midwest Criminal Justice Association, Chicago, IL.

*Detecting deception: Comments on the controversy about the accuracy of polygraph testing in criminal investigations and recent empirical findings.* (March, 1990). Paper presented at the Academy of Criminal Justice Sciences, Denver, CO.

*An overview of research on factors that may affect the validity of the control question test.* (May, 1990). Paper presented at the National Conference on Polygraph Procedures, Delta College, University Center, MI.

*Screening candidates for police work: Polygraph testing in United States law enforcement agencies.* (August, 1990). Paper presented at American Polygraph Association, Louisville, KY.

*A national survey of techniques, assignments, and policies relating to polygraph use in police agencies in the United States.* (August, 1990). Paper presented at American Polygraph Association, Louisville, KY.

*Polygraphic screening of candidates for police work in large police agencies in the United States: A survey of practices, policies and evaluative comments.* (March, 1991). Paper presented at Academy of Criminal Justice Sciences, Nashville, TN.

*The truth--as we now know it-- about control question polygraph testing.* (August, 1991). Paper presented at American Polygraph Association, Reno, NV.

*Polygraphic screening of candidates for police work: An assessment of changes in usage and police executives' views from 1964 to 1991.* (October, 1991). Paper presented at Midwest Criminal Justice Association, Chicago, IL.

*Reduction of errors in control question polygraph testing; Empirical evidence on the utility of a "sacrifice relevant" question.* (May, 1992). Paper presented at National Workshop on Practical Polygraph Procedures, Delta College, University Center, MI.

*An assessment of pre-employment polygraph screening in large and small police agencies in the United States.* (May, 1992). National Workshop on Practical Polygraph Procedures, Delta College, University Center, MI.

*Pre-employment screening in police agencies in the United States: Preliminary findings of a national survey.* (July, 1993). Paper presented at American Polygraph Association, Newport Beach, CA.

*The effect of case type on blind analysis of confession-verified, field polygraph records.* (February, 1994). Paper presented at American Academy of Forensic Sciences, San Antonio, TX.

*Future shock: Problems and prospects for the detection of deception, 1994 into the 21st century.* (July, 1994). Paper presented at American Polygraph Association, Nashville, TN.

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Copies of all published papers are available to APA members, at cost of reproduction, upon request. Copies of M.S. theses are available through interlibrary loan or, at cost, from University Microfilms.

The staff of the APA Research Center also provides advice on research design, commentary on published research reports, bibliographic searches and assistance in the preparation of research by APA members or others interested in the field. All APA members are encouraged to call or write the Research Center for assistance when necessary. (517-355-2210/2197 or FAX: 517-432-1787).

## HISTORICAL NOTE

### THE ISDD, AN APA PREDECESSOR

The International Society for the Detection of Deception officially came into existence on December 30, 1947, when it was incorporated at Bismarck, North Dakota. But the idea of such an association had been tucked away in the minds of a number of pioneers in the field for many years. As early as 1940, a group of polygraph operators (examiners), including Paul Trovillo, Vern Lyon, Arthur Eggert, George Haney, John Reid, and Leonarde Keeler, met together and exchanged ideas regarding the desirability of forming such a society. Other meetings were held after the first one, and the aim and objectives of the proposed organization were set forth. The organization was initially proposed as an association of polygraph operators (examiners) and its purpose was to be basically the same as that of the society when finally organized.

After these early meetings, nothing concrete was done toward organizing the society for a number of years -- until August of 1945. At that time, a group of eight polygraph operators (examiners or technicians) assembled at Fort Getty, Rhode Island on a mission for the U.S. Government. At Fort Getty were several hundred German POW's who were to go back to Germany to aid the U.S. Government Occupation forces in governing the American sector of Germany, and the U.S. Army had asked Leonarde Keeler to screen these prisoners before they were returned to Germany.

The long evenings at the Bay View Hotel were spent discussing the entire subject of the detection of deception--including the formation of a society for operators. Leonarde Keeler and Paul Trovillo, as well as C.M. Wilson, who had participated in the original discussions, once more outlined the plans for the society.

The eight operators on the Fort Getty project--W.J. Austin, D.L. Cowles, R. Chatham, A.L. Gregory, L. Keeler, R.W. Pierce, P.V. Trovillo, and C.M. Wilson, elected officers and discussed aims and objectives for the society. Constitution and By-Laws were drafted, and a problem presented itself in the selection of a suitable name for the organization. Four or five names were suggested, but none was equally acceptable to all. It was felt that the name of the society should be as descriptive of its function and scope as possible. The group in 1940 had suggested the society be called the "National Polygraph Operators Society," but the group in 1945 planned to have the association cover all phases of the detection of deception and thereby broadened the field of research as well as the membership.

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The historical material above is from the papers of Leonarde Keeler, donated to the DoD Polygraph Institute by his sister, Eloise Keeler. The words in parentheses are handwritten notes as they appeared in the typed manuscript. Attached to the manuscript were Leonarde Keeler's ISDD membership cards for 1948 and 1949. Robert P. Cole, historian at the Institute, who found and submitted these papers, notes that at the bottom of the last page there is handwriting, presumably by the author, that appears to be the words "By" and two initials, the first appearing to be a figure eight and the second clearly the letter "S." The initials are probably those of Viola Stevens, Keeler's secretary. Note the brief mention of the founding of the ISDD in her "Biography of Leonarde Keeler," in *Polygraph* (1994) 23 118-126.

Selection of a name for the society delayed the incorporation for some time. At one time, the organization was to be known as the "Forensic Psycho-Somatic Society" or the "Forensic Psycho-Physical Society," either of these being considered descriptive of the nature of the society. Other names considered were the "International Society for Deception Research," and "National Society for the Advancement of Deception Research," as well as the name that was finally decided upon as being the most suitable and the most descriptive.

When the name was finally agreed upon, W.J. Austin, who had been named Secretary at the meeting in Fort Getty, completed the incorporation in Bismarck, North Dakota. Other officers originally elected by the same group were: R.W. Pierce, President; (David Cowles, Vice President, W.J. Austin, Secretary-Treasurer). [The original Board of Directors consisted of] Leonarde Keeler, (was elected) Chairman of the Board of Directors.

The foundation of the ISDD met with the approval of August Vollmer, former Chief of Police at Berkeley where Keeler was first trained in the use of the polygraph by John A. Larson, C.D. Lee, and George W. Haney. On August 26, 1948, writing from his home at 923 Euclid Avenue in Berkeley, August Vollmer wrote:

Dear Leonarde:

It was good news to learn that an International Society for the Detection of Deception has been formed. Such an organization will help to stimulate the use of deception technique throughout this country, providing the Society maintains high qualification standards for admission to membership.

Fingerprinting limped along for a number of years until we organized, at the old police station in Berkeley, the Int.Ass. of Fingerprint Experts. From that date fingerprinting moved ahead with considerable speed. My hope is that the Detection of Deception will follow the same pattern.

I have no objection to becoming an honorary member but do not believe that my membership will add anything to your organization.

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For details of the 1945 screening of German POWs, see John G. Linehan (1978) *An Aspect of World War II Use of the Polygraph*, *Polygraph*, 7 (3) 233-239. Relying on an unpublished manuscript by Chatham and Trovillo written in 1955, Linehan gives the location as Fort Wetherill, Rhode Island, (ed.)

The words in brackets in the last sentence were crossed out in the original notes. The last line of the page indicates, because of a comma at the end of the line, that there was additional information, but an unknown editor made the changes apparently for the sake of being grammatically correct. (RDC.)

#### Historical Note

O.W. conveys the disappointing news that you may not be able to accept the appointment of Professor of Criminology at Cal. Well, you are the best judge of what is best for you, so that's that. However, it does not alter the fact that we shall miss you in the total program and at the old pie counter.

Trovillo dropped in the other day and told me that the future of deception testing on the coast does not look too promising for him. Nevertheless, he intends to give the instrument a real try-out on the several levels and will not quit unless he has to in order to eat.

With the best of everything to you, I am

Faithfully yours,

August Vollmer (signed)

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Note: The letter above is also in the DoDPI Archives, (Ed.).

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#### Abstract on Heart Rate

Watanabe, Shoichi & Kajitani, Mantaro (1973). The heart rate response as an index of the lie detection test: A study of heart rate response on field testing situations. *Reports of the National Institute of Police Science*, 26(3), 191-196. [text in Japanese, English abstract]

#### *Procedure:*

Fifty-eight sets of polygraph charts in which guilt or innocence was confirmed by confession and physical evidence were selected from the file of the Okayama Prefectural Police Headquarters in Japan. All the tests involved peak of tension technique. The examiners counted the heart rate from the cardiosphygmograph pattern to determine the characteristics of reactions and whether there was an overall difference in the heart rate of deceptive and truthful persons.

#### *Results:*

The 25% of the population that represented the slowest heart rate exhibited an even slower rate during a deception reaction. This was not the case among the 25% of the population with the fastest initial heart rate. It occurred sometimes among the middle 50%. The difference in mean heart rate between guilty and innocent cases was reported to be significant ( $p < .01$ ).

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