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# A. K. Ganguly, Ph.D.

Admissibility of polygraph in courts, although debatable yet, its application reveals the utility in criminal investigation. Following its success in the U.S.A. and other countries, the first Polygraph Division in India was established in 1973 in the Central Forensic Science Laboratory, New Delhi. To date, more than 3000 examinations have been conducted pertaining to all type of offences, viz, murder, rape, fraud, burglary, robbery, kidnapping and terrorism, etc. Follow-up results show 90-95% accuracy.

According to the Indian Constitution and Evidence Act, polygraph results are not admissible, but if conducted by a person other than a police officer, courts may accept the results. However, there are instances where our reports have been admitted by various courts in India.

In different States or regions in India different language is spoken, fifteen to be precise. Since a polygraphist cannot be familiar with every language, his operation becomes restricted. Our experience with interpreters show that although successful examinations can be conducted yet, the sailing is not smooth and lacks professional satisfaction. Following the success CFSL established polygraph examination facilities and others are likewise planning.

Polygraph movement in India is gradually gaining momentum. In years to come this will further develop. Polygraphists in India will continue to update their knowledge on the basis of new findings or techniques developed in other countries and will add, whatever little is possible, to the efforts being made by polgyraphists elsewhere towards the global recognition of this important field of expertise in criminal investigation and administration of justice.

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There cannot be anything more baffling than human nature. Biologically, although survival and procreation is the basic function of any living organism, the homo-sapiens during long span of evolution have deviated significantly from this aim alone. On one hand they have developed a social system and on the other the complexities of human behavior. Around the nucleus of social system, due to geographical and environmental factors different cultures have developed. From one to another region in the world we observe variations in socio-cultural patern and forms of human expression in terms of language, food habits, religion, faith, superstitions, philosophy of life, fashion, etc. Inspite of such differences in socio-cultural forms, there exists a common link, that is to maintain the decorum of civilized society and keep it safe from individuals who are bent upon to spoil this decorum.

Behaviour, which may be defined as "the total response, motor and glandular, which an organism makes to any situation with which is it faced" (Drever, 1952), depends on the individuals overall psycho-physiological development. During socialization an individual inculcates certain attitudes, values, likes-dislikes, etc. which play an important role in shaping his behaviour (Ganguly, 1967 & 1974). In any civilized society, where behaviour is not within the framework of accepted socio-legal norms and intentionally material or mental harm is caused to another member of the society by a person (criminal) it attracts the attention of law enforcement agencies. Consequently, criminal investigation and administration of justice follows. All over the world there is a constant tussle between those who adopt criminal behaviour, and those who are responsible to curb such behaviour to maintain the decorum, peace, law and order of the society. In this process, law enforcement agencies, judiciary, forensic scientists, criminologists, psychiatrists, psychologists, and various other specialists contribute significantly.

Polygraph (lie-detection) which, to a large extent, is an applied branch of psychology determines facts concerning criminal behaviour. Thus, it renders significant assistance in criminal investigation and administration of justice. Basic aim in polygraphy is analysis of behaviour to diagnose attempted deception by a person alleged to be intentionally suppressing some factual information with regard to a crime or offence. So far as general analysis of behaviour is concerned a criminologist or a psychologist renders useful help. Their analysis can give clues to possible socio-economic-cultural or general personality factors which cause the development of criminal attitude/tendencies in an individual. A person with such attitudes/tendencies when committing a crime tries to suppress the facts during normal police interrogation, and give false statement to avoid punishment. It is in this context that polygraph examination of the person renders assistance to ascertain whether the statement is correct or false.

The polygraph and the allied technique as we know today, was developed in the U.S.A. in the early decades of the present century by Keeler and Larson. Over the years it has developed into a very useful scientific aid to criminal investigation. Over the years it has also been adopted by various countries, <u>e.g.</u>, Japan, Canada, Israel, etc. Numerous studies have been conducted, both in the Laboratory and field, which reveal a high percentage of correct diagnosis of deception (Horvath & Reid, 1971; Hunter and Ash, 1973). Efforts are still in progress to develop the technique further to achieve more reliable and acceptable results.

Having preceeding discussion as the back drop, an attempt has been made in the present paper to highlight the successful application of polygraph in India and its future prospects.

## POLYGRAPH: APPLICATION IN INDIA

Polygraph can render assistance to the investigative agencies was first felt in 1948 after the assassination of Mahatma Gandhi when a police officer, P. Shivabasappa was sponsored by the Indian Government to undergo a training in polygraphy in U.S.A. Although, he returned after obtaining the requisite training, but for some reason the movement could not gather momentum. However, he did conduct some experiments and also published a paper entitled, "The Detection of Lies - An Indian Experiment" (Shivabasappa, 1954). This is the only evidence available in the area of polygraphy in India, before a decision was taken by the Government of India in 1969 to establish a Polygraph Division in the Central Forensic Science Laboratory under the administrative control of Central Bureau of Investigation, New Delhi.

Following the above decision, since 1973, after the present author joined the Laboratory, this work is being regularly undertaken. The work was initiated with a Keeler polygraph. Gradually better models were imported and today we have three polygraphs of Lafayette make (one more will be added shortly) available in the Division with examination rooms having facilities technically appropriate for the purpose. For developing the Polygraph Division, we have meticulously followed the details available in standard textbooks on Polygraph. Every possible book or article on polygraphy available to us in India helped to understand and develop a better insight. Of these, particularly, "Lie Detection & Criminal Investigation" by Inbau & Reid provided the necessary material to lay the foundation for the development of this important area of specialisation in India.

Historically, although polygraph came to India around 1948, it is in fact the Central Forensic Science Laboratory, New Delhi which took the initiative in 1973 to develop and popularise the movement. Following our successful application, a few states in India, namely Gujarat, Haryana, Rajasthan, Jammu & Kashmir, Madhya Pradesh have already established Polygraph Divisions. We have rendered every assistance to these States in procuring polygraphs, training of their personnel and providing list of books, etc. to help them to develop their own information center. Copies of various articles and papers on polygraph available with us have also been provided to these newly developed Divisions and even now whenever we come across any useful information, the same is passed on to them to update their list of references.

# SOURCE OF CASES, METHOD OF EXAMINATION/ANALYSIS FOLLOWED AND EXTENT TO WHICH EXAMINATIONS PROVED USEFUL

i) <u>Source</u>: The Central Forensic Science Laboratory caters to the needs of the Central Bureau of Investigation and the Metropolitan Police of Delhi. As a special case examination of suspects from other States are

also undertaken where such facilities are not available. Since 1973 to date more than 3000 examinations have been conducted and reports furnished to various investigative agencies. The persons examined were either criminal suspects, witnesses or complainants.

In 1973 when this work was initiated, the normal examination techniques followed was either R.I.Q or P.O.T. In certain cases we had also tried to apply General Question Technique or Specific Concern Technique. Since 1977-78 we are applying regularly the Control Question Technique. In fact this technique was suggested by Dr. Stanley Abrams of U.S.A. who visited us around that time. Later, Dr. Barland of the University of Utah suggested to try his Dual Control Question Technique. Of all these, we have found that a combination of RIQ and CQT generally yield good results.

 Method of examination/analysis: In conducting the examination, steps followed are as below:

a) The investigating officer provides the details of the case along with the copy of complaint and statement of persons to be polygraphed. He would also specify the issues which need verification;

b) The case as such is discussed with the suspect in absolute privacy and it is made clear to him that he has the legal and constitutional right to refuse to take the test. If he is prepared to take the test his consent under signature and date is obtained;

c) After establishing the normal response pattern, a card or number test is conducted to establish deception criteria;

d) Once the preliminaries are set, the questions to be asked are rehearsed followed by actual examination;

e) Based on polygraphic data, post-examination interrogation is carried out mainly to obtain an admission of the suspect in case it is observed that he attempted deception during examination, and

f) After the examination, the results are discussed with the investigative officer followed by an official report for further necessary action of the investigation.

So far as analysis and evaluation of polygrams are concerned, normal qualitative method is followed. Although quantitative analysis can enhance the level of acceptance of polygraph examination reports, yet, somehow we have not been able to adopt a suitable technique for the purpose. Incidentally, it may be mentioned here that in Central Forensic Science Laboratory, New Delhi, an experimental study was conducted to develop a quantitative method which is being published in the journal "Polygraph" of the American Polygraph Association. However, even this technique we are not applying in normal case work presently because it needs further study and refinement based on a larger sample. Application of quantitative or statistical method of analysis along with qualitative will certainly enhance the credibility of results.

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iii) Extent to which examination proved useful: Of 3000 examinations so far conducted, in respect of around 20% deceptive response and 75% no deceptive response have been detected. For the remaining 5% either meaningful polygraph tracings could not be recorded and the results remained inconclusive or the subjects were found unfit to take the test. However, the extent to which examinations proved useful would be clear from a few cases cited below:

a) A government employee posted as a cashier embezzled approximately Rs.50,000/-. According to the history of the case the cashier found the lock of the iron safe open when he came to the office in the morning. During preliminary interrogation by the police he pleaded innocence. The lie-detection test revealed that the suspect is guilty of the crime. When confronted with the test results he admitted that he had misappropriated the government money and lodged a false complaint.

b) In a murder case, the suspect who had a criminal record initially denied all charges against him. The lie-detection test revealed that although he had not committed the offence, yet, he had full knowledge as to who had committed the murder. When confronted with test results, he admitted that the offence was committed by two persons in his presence and he only had removed the dead body from the scene of crime by dumping it on a railway track far away from the crime scene.

c) An automobile mechanic along with his wife and two children were staying as a tenant in a portion of a house. His wife lodged a complaint that while the ladies of landlord's household had gone to the market in the afternoon and she was alone, two persons entered the house. After robbing her of the ornaments they tried to molest her and then broke open the lock of the bedroom of the landlord and took away jewellry, etc. Police during investigation felt suspicious regarding the statement of the lady. She was asked to take the lie detection test, which revealed that with the help of an associate, her paramour, she herself committed the offence and lodged a false complaint. The police later recovered stolen property worth around Rs.70,000/-.

d) A young college student reported to the police that a businessman of his locality wanted him to murder an eminent resident of their locality. The businessman promised to pay Rs.10,000/- if he could execute the job. The said businessman was questioned thoroughly by the police and they came to the conclusion that he was perhaps innocent. Based on this the young college student was asked to take the lie detection test which revealed that his story was false. He admitted his guilt of lodging a false complaint with the sole purpose of harrassing the businessman with whom he had some personal enemity.

e) A businessman reported theft of ball bearings worth Rs.l lacs from his factory warehouse and a signed leaf from the cheque-book lying in his office. A sum of Rs.20,000/- was withdrawn from the bank by the culprit using the signed stolen cheque-leaf. The businessman suspected his present as well as ex-employees. All of them (seven in number) were subjected to polygraph examination. One of them could be identified as the offender. During interrogation while the suspect admitted stealing the cheque-leaf and withdrawing the money from the bank, he continued to deny

the charge regarding the theft of ball bearings. This aspect was further examined by the police and ultimately he admitted his guilt.

f) A young girl was raped and murdered in one of the woman's hostels in Delhi. She had a boyfriend since her college days whom she intended to marry. Of late, due to some inconsistent and abnormal behaviour of the boy, she refused to marry him. The boy was reported to be frustrated on this account and was strongly suspected for the offence. In this case the alleged offender was probed regarding his knowledge, association or involvement. His statement that he had no knowledge as to who had committed the offence was found to be correct. This fact was later confirmed by the arrest and confession of the actual offender.

g) This particular case is being cited to show the peculiarity of human behaviour. In this case a person inspite of being innocent, out of fear, revealed such behavioural symptoms which led the police to suspect him as an offender. In the instant case the offender suddenly found himself in a situation which compelled him to manipulate evidence to prove that since he himself was a victim how could he commit the offence. The background of the case is that a business executive reported theft of precious jewellry and cash from his residence during the daytime. At the time of occurrence no family member or servants were present in the house. One of the servants, who was living in the servant's guarter also reported theft of a table fan, a watch and some other articles from his room. During the course of the investigation, it came to light that the servant who reported theft from his own room had visited the premises of the business executive during the afternoon. In fact only for this reason he was considered as a probable offender. In this case questions pertaining to his knowledge, association or involvement in the offence were asked. No meaningful responses could be obtained. However, the suspect's statement regarding the theft of a fan, a watch and other articles from his own room was found to be incorrect. When confronted with the test results, he admitted of having made false complaint only to impress upon the police that he himself was a victim and thus could not have committed the offence. This was found to be correct when the actual offenders were apprehended at a later stage by the police.

### STUDIES IN THE ACCURACY OF POLYGRAPHY IN INDIA

Considering that the question of accuracy is always linked with every scientific technique, it was felt that with polygraph too, this issue will be debated in India. Consequently, an experimental study was undertaken which indicated that while accuracy with volunteer subjects is to the tune of 70% only, with criminal suspects it is 90% (Lahri & Ganguly, 1978). In order to verify the factual position, follow-up of the results of cases reported indicated accuracy between 90-98% (Ganguly & Lahri, 1976; Lahri & Ganguly, 1981 and Lahri et al, 1984). Other studies taking demographic factors into consideration reveal interesting results. One such study (Lahri & Ganguly, 1981) shows 90% accuracy in respect of persons coming from different socio-economic levels, age and educational backgrounds. The study also indicated that habitual offenders can be successfully polygraphed and majority of subjects connected with homicide are in the age group of 21-30 years, economically poor, and either illiterate or very In view of our socio-cultural background the female less educated.

population, by and large is submissive, moderately educated and suffer from inhibitions as well. A study conducted to assess the success of polygraph examination on female population revealed more than 99% accuracy (Lahri, <u>et al</u>, 1984).

A problem which is perhaps unique for polygraphists in India, is the language. Firstly, there are fourteen regional languages and secondly, the same language has different dialects in voque. English language has also been adopted for general use. To determine whether language could be a barrier for successful polygraph examination or not, studies conducted by the present author and his associate (Dr. S. K. Lahri) reveal that language is no barrier to conduct successful polygraph examination provided the subject is encouraged to follow the language of his choice. Studies indicate that examination could be conducted with the help of an interpreter in case the polygraph expert is not familiar with the language of the subject's choice (Ganguly & Lahri, 1976 and Ganguly, 1981). In this context, it may however, be added that since a polygraphist cannot be familiar with every language, his operation becomes restricted. Our experience with interpreters show that although successful examination can be conducted, yet, the sailing is not smooth and lacks professional satisfaction.

## APPLICATION OF POLYGRAPH IN OTHER CENTRES IN INDIA

As already stated, in addition to Central Forensic Science Laboratory, New Delhi a few States in India have also established Polygraph Divisions in their respective State Forensic Science Laboratories. In many of these Centres the work has not yet attained the full swing. They are, working hard and we are hopeful that their achievements will also be significant in near future. A brief description regarding these centres however, merit a mention here.

i) Forensic Science Laboratory, Madhuban (Haryana): The polygraph division with two senior level experts with adequate supporting staff is undertaking examinations regularly. The senior expert was trained at C.F.S.L., New Delhi. They are using Lafayette model polgyraph under proper scientific conditions. The 1986 Annual Report of the Laboratory indicates that during the year the Division conducted more than 120 examinations pertaining to various types of offences. The experts belonging to the centre have published six research papers in Indian Police Journals and have also deposed in courts.

ii) Forensic Science Laboratory, Ahmedabad (Gujarat): Two senior level experts with supporting staff are undertaking polygraph examinations regularly. One of the senior experts obtained training at C.F.S.L., New Delhi. No authentic information regarding examinations conducted by these experts is available. They are using polygraph of Indian make. Regarding its perfection the present author has reservations because inspite of repeated requests the manufacturers have neither furnished details nor arranged a demonstration for us.

iii) <u>Forensic Science Laboratory, Jaipur (Rajasthan)</u>: Although polygraph of Lafayette make had been imported by the Laboratory nearly 4-5 years ago, adequately qualified personnel have not yet been recruited by the Laboratory to run the department. iv) Forensic Science Laboratory, Srinagar (Jammu & Kashmir): Polygraph of Lafayette make had been purchased by the Laboratory. Although senior level polygraphists are yet to be recruited, lower level personnel trained by C.F.S.L., New Delhi are undertaking, in a limited way, examinations regularly since 1984. Once senior level experts join the Department, the work will certainly be carried out in a more appropriate manner.

v) <u>Police Headquarters, Bhopal (Madhya Pradesh)</u>: In this State, the Division instead of being under the State Forensic Science Laboratory, is functioning under Police Chief of the State. The work is being carried out by a police officer of a comparatively lower rank. So far as equipment is concerned, of course, the Department had imported Lafayette make polygraph.

In the above context it is pertinent to mention that a few more States are now considering very actively to establish divisions in their respective State Forensic Science Laboratories. These states are West Bengal, Bihar, Assam, Orissa, Karnataka, Punjab and Uttar Pradesh. Once centres are established in these states, the application, popularity and understanding of the expertise in the right perspective will certainly increase.

## LEGAL ADMISSIBILITY OF POLYGRAPH TEST RESULTS IN INDIA

It is an accepted fact that in criminal investigation and administration of justice, the main issue is to connect the criminal suspect with the crime. This is made possible by scientific examination of physical clues resulting in direct or corroborative evidence. This apart, determination of the authenticity of testimony given by a person certainly has an important role in this context. Application of polygraph from a modest beginning in the early decades of the present century, has now transformed into a reliable scientific technique to render this service to the investigative agencies. However, inspite the fact that polygraphy has proved useful, its legal admissibility has attracted considerable debate even in countries where it is extensively used (Raskin, 1981).

In India where the expertise at the moment is in its infancy, the issue is likely to be raised when other states will also have polygraph divisions. Regarding its legal admissibility, Deb (1968) remarks that according to Section 162 and 342 of Cr.P.C., Section 25 of the Indian Evidence Act and Sub-Clause 3 of Article 20 of the Constitution of India there are insuperable difficulties in the way of the acceptance of lie-detection evidence against the accused, however, if the test is conducted by an expert other than a police officer, the courts may not have objection to accept it as evidence.

There are two aspects involved as a whole with polygraphy. One pertains to its application as an aid to investigation and another to the acceptance of test results by courts as evidence. At Central Forensic Science Laboratory, New Delhi since 1974 to date more than 3000 examinations have been conducted and reported. There is not a single case where courts have objected to its use by the investigative agencies. This confirms the remarks of Deb (1968) that courts in India have no objection to

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its use as an aid to investigation. So far as its legal admissibility is concerned, the present author and his associates in C.F.S.L., New Delhi and elsewhere have deposed in courts and their reports have been admitted. This indicates that Indian courts are not rigid towards polygraph. Τo what extent reliance was placed by the courts in arriving at decisions, no specific ruling is available which could be cited. However, in a murder case conducted by Central Bureau of Investigation polygraph test results were presented during the argument of bail petition of the accused. The Magistrate did consider the polygraph report while cancelling the bail petition of the accused (Biswas, 1979). In a different context a District & Sessions Judge in India remarked that polygraph is really useful and in addition to investigation, its application for the detection of perjury by witnesses deposing in courts could be examined in the context of the existing law and the necessity for amendment in it to provide for the authority to the court to subject the witness to polygraphic tests (Chaudhary, 1979).

On the basis of preceeding observations, it is felt that the courts in India including the practising lawyers may raise questions regarding the criteria to be adopted to consider polygraph admissibility. According to Nameth (1983) courts may like to consider the following three aspects before granting recognition to polygraph opinion:

- (a) The reliability of the technique,
- (b) The test is applied according to the accepted procedure; and
- (c) The test has been administered by a competent authority.

As already discussed the laboratory and field studies in India have established accuracy to the tune of 70-90 percent and the conditions that test should be applied according to the accepted procedure by a competent authority have also been met satisfactorily by us. As such we are hopeful that the courts in India will certainly recognise the utility of this expertise in criminal investigation and administration of justice.

However, there is one aspect which may cause hindrance in this regard. The courts may question the standard of training of polygraphists and steps taken for quality control. In this context attention is drawn to the following guidelines given by American Academy of Polygraph Examiners (Nicol, 1960) which we have adopted in India. These are:

 (a) A professional examiner whose major activity is to conduct polygraph examinations is qualified to train others;

(b) The training should be done only where practical experience on actual cases is available and used as part of the training;

(c) Technique of learning the case facts, preparing the subjects of examination, question formulation, techniques of examination, evaluation of charts, interrogation of the subject, basic topics of physiology and psychology should be taught during training; and

(d) training period should not be less than six months.

Similar to U.S.A., in Japan as well there is a centralised authority for quality control. According to Suzuki (1983) the standard of polygraph is controlled mainly by adopting the following procedures:

(a) Criminal Identification Division, Criminal Investigation Bureau, National Police Agency established procedural standards for polygraph test and gather statistical data concerning the test with the help of National Research Institute of Police Science.

(b) Psychology Section at NIPS holds a four week training course once a year. Candidates for this course must have college degree. This course is the only one for polygraphists within police organization. Psychology Section at NIPS is performing research on the test and consulting examiners from technical point of view; and

(c) The curriculum of training includes psychophysiology, psychology, operation and calibration of instrument, interview technique, forming questionnaire, mock crime test, chart interpretation, legal status, etc.

As compared to the standards of training, etc. described above, what programme has been worked out at Central Forensic Science Laboratory, New Delhi to render training in polygraphy? As stated earlier, the discussion is important for reasons that in case there is some lacuna it could be pointed out so that the same is rectified before it is too late. Further, as a polygraphist and pioneer in this field in India, we look forward to the various State authorities to assess whether the programme of training, etc. worked out by us is proper, and adequate or not from the angle of quality control. If convinced, they should impress upon those states who are likely to establish polygraph divisions to follow the programme meticulously for quality output. According to the training programme proposed by Central Forensic Science Laboratory, New Delhi the trainee must hold a Master's degree on Psychology/Criminology and undergo training in the following areas:

(a) orientation to general psychology covering emotions, development of personality, assessment of personality, etc.

(b) orientation to basic human physiology covering anatomy nervous system, circulatory system and the function of autonomic nervous system;

(c) historical development of polygraph (lie-detector) and its scientific basis;

(d) technique of polygraph examination, question formulation, interpretation and evaluation of polygraph charts;

(e) practical demonstration followed by practical polygraph examination to be conducted by the trainee(s) under supervision;

(f) preparation of reports, etc. pertaining to polygraph examination conducted; and

(g) period of training six months.

The training programme alone cannot be considered enough for the proper development of polygraph in India and its subsequent judicial recognition., If it has to attain any legal status, which it should, in that case;

(a) more polygraph centres have to be operative in the country;

(b) a centralized controlling body should exist to maintain the procedural standard and training of polygraphists as is existing in U.S.A., Japan, etc.

(c) the legal experts, <u>i.e.</u>, practising lawyers, judges, etc. should render constructive criticism towards the technique; and

(d) psychologists associated with university teaching in India should realise the socio-legal importance of this scientific approach and take academic interest to conduct properly planned studies towards its accuracy and for the development of examination techniques with the collaboration of polygraphists.

# CONCLUSION

The conditions which can ensure proper development as well as judicial recognition, by and large, are not presently available in India. Apart Central Forensic Science Laboratory, New Delhi and a few states, this expertise is not available in majority of the Indian states. There is not a single university in the country where any systematic study in this field is being carried out. In this context it may be mentioned that Department of Criminology and Forensic Science, University of Saugar have taken a lead to introduce "Polygraph" as a part of the syllabus for the Master's degree in Criminology. This indeed is a great professional service which the University of Saugar has rendered (Jatar, 1983). So far as the reaction of courts in India is concerned it has already been explained. However, the practising lawyers in India by and large, are not aware that some movement towards the development of polygraphy in the country have taken place. The requirement can be achieved only when in majority of the states the facility is available. In this direction Institute of Criminology & Forensic Science, Government of India, New Delhi is rendering highly useful service. The Institute is organising orientation courses for senior level officers from police, judiciary, correctional services, etc. in the field of forensic science including polygraph. After attending such courses the officers responsible for policy decisions must ponder over the issue and if convinced intellectually on its merits and potential, come forward with suggestions so that the development of polygraphy in India could be steered in the right direction. Present author is regularly addressing the officers participating in these orientation courses and impressing upon them the utility and advantages of polygraphy in criminal investigation.

It will not be out of context to mention here that the 6th All India Forensic Science Conference was held in 1985 at Madras, where a paper on lie detection was presented (Lahri, <u>et al</u>., 1985). Summing up the proceedings, Mr. S.K. Mallik, Director General, Bureau of Police Research & Development, Ministry of Home Affairs, New Delhi recommended that this

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scientific interrogating technique should be adopted by all the police forces in India on a much larger scale than is being used. Similarly "National Seminar on Science & Technology in Aid of Criminal Investigation" was held at Trivandrum on 18th and 19th April, 1986. Along with papers on different topics of forensic science, two on lie-detection (Lahri, <u>et al</u>., 1986 and Bhaseen, <u>et al</u>., 1986) were also read by Dr. S. K. Lahri, an associate of the present author. Delegates to the Seminar were forensic scientists and senior police officers. The Chairman of the session recommended that a National Seminar on Polygraphy (Lie Detection) should be convened and polygraph should be used by security agencies.

The Central Forensic Science Laboratory, New Delhi, or for that matter, any other State Laboratory where polygraph divisions may be operating, polygraphists can only work and try to develop the expertise, but it is certain that unless those who are directly associated with the administration of justice including practising lawyers do not raise the fundamental issues from the legal angle the development will not be adequate. It is a know fact that every branch of forensic science, e.q., Pathology, Chemistry, Psychiatry, Toxicology, Biology, Ballistics, etc. have developed only due to the penetrating questions raised by legal experts. This holds good for polygraph as well. Accordingly, a constructive criticism and assessment is essential for the proper development and utilisation of this expertise in the country. The due appreciation, if not recognition, should not be denied only on this plea that in European countries it is not used and in U.S.A., etc. it has attained, but a limited success in gaining judicial recognition. The police administrators, lawyers and the judiciary must point out the inadequacies which need to be removed before the technique could be considered for acceptance. It is necessary that properly planned research studies should be undertaken to overcome them. The present author is convinced that in the administration of justice, like any other branch of forensic science, polygraphy can also render useful service. There is no justification in denying it this opportunity. It is felt that the concerned authorities should judge not on the basis of academic rigidity but, intellectual flexibility the utility and admissibility of polygraph (lie detector) test results in India.

In fact, polygraphists all over the world wherever it is under use, should work out a minimum line of action to impress upon the authorities for its recognition. If criminals can work out their strategy on international level to commit crimes, and get away with it, should we not work out our own strategy to nullify the same? We should think over the issue and adopt a common line of action for the benefit of the civilized society and particularly for handing over a better society to the generation which will take over from us.

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#### APPENDIX

Source: <u>Principles of Criminology, Criminal Law & Investigation</u>. Volume I. By R. Deb. Published by S.C. Sarkar & Sons(P) Limited I-C, College Square: Calcutta-12, pp. 80-81.

## How Far Such Evidence Would Be Admissible in India?

"Quite apart from the question of its value as a piece of scientific evidence, the lie-detection test appears to be unacceptable to an Indian court also on grounds of law. In countries where statements or even confessions to the Police in course of investigation are accepted as legal evidence, the lie-detection test has been held to be inadmissible because it is still considered to be in its experimental stage and has so far failed to secure general recognition from the Scientific world. The same argument holds good in this country as well. Moreover, the provision of sections 162 and 342 of the Criminal Procedure Code, S.25 of the Indian Evidence Act and Sub-clause (3) of Article 20 of the Constitution of India present almost insuperable difficulties in the way of the acceptance of lie-detection evidence against the accused in India. According to S.25 of the Indian Evidence Act confession made to a Police officer is inadmissible as against a person accused of any offence. And S.162 Cr.P.C. lays down the statements recorded by the Police in the course of an investigation shall not be used for any other purpose except for the purpose of contradiction. Lie-detection evidence in a criminal case being nothing but an interpretation by the expert of the replies given by a suspect to a questionnaire containing crucial and non-crucial questions, it is hardly possible to avoid the mischief of S.162 Cr.P.C. if such a test is carried on by a Police Officer in course of an investigation, for interpretation, quite apart from the statement made, is unintelligible and meaningless. And if the statement also amounts to a confession before the police, it becomes barred not only by Sec.162 of the Criminal Procedure Code but also by S.25 of the Indian Evidence Act.

If, however, such a test is conducted by an expert who is not a police officer, the provisions of S.162 Cr.P.C. and S.25 of the Indian

Evidence Act will not be attracted. But in that case as well it may still become difficult to admit such a piece of evidence against the accused in view of the fundamental rights against self-incrimination guaranteed to the accused in Article 20 of the Indian Constitution. Clause (3) of that Article clearly lays down that no person accused of any offence shall be compelled to be a witness against himself. 'To be a witness' means 'to furnish evidence' and such evidence can be furnished by lips (see. M.P. Sharma  $\underline{v}$ . Satish Chandra, 1954 Cr.L.J. 865 (S.C.); State of Bombay  $\underline{v}$ . Kalu, 1961 (2) Cr.L.J. 856 (S.C.). Article 20 (3) of the Constitution has however no application if the accused is not compelled to give evidence against himself (Ranjit  $\underline{v}$ . State A.I.R. 1952, Himachal Pradesh, 81; Kathi Kadu, <u>ibid</u>., Md. Dastgir v. State Madras, 1960 Cr.L.J. 1159 (S.C.).

Similarly, S.342 Cr.P.C., which empowers the court to examine the accused at any stage of the trial also lays down that the accused shall not make himself liable by refusing to answer any question. Moreover the object of S.342 Cr.P.C. is not to incriminate the accused but to enable him to explain any circumstances appearing in the evidence against him. (Arjundas Khandelwal  $\underline{v}$ . Bhasantlal, 1953 Cr.L.J. 980; Sub-section (1) of S.342 Cr.P.C.). Thus, there is no provision of law under which the accused can be compelled to subject himself to a lie-detection test, even in course of his examination by the court.

There is however no law either which forbids the use of 'lie-detector' with the consent of the accused. But even if such a test is conducted with the express consent of the accused would that make the lie-detection evidence admissible in law? As already observed above even in occidental countries such evidence has not been uniformly accepted in criminal cases inspite of the request of the accused. True, in some American cases such evidence has been accepted on the basis of an express agreement between the parties. But is it possible to do so in India? When courts have not yet accepted a lie-detection testimony as a scientific evidence of value, can the parties agree to create a special rule of evidence by means of an agreement?

Thus it is seen that though it may not be illegal to conduct a liedetection test with the consent of the accused, it would not be that reason alone become a piece of admissible evidence before an Indian Court. It must be admitted that the scientific principles involved in the lie-detection tests have not yet been set on a firm footing and the science of lie-detection itself is in its experimental stage. And as shown by Floch and Reid this method is not at all infallible. It would, therefore, take considerable time before the results of lie-detection tests are accepted as legal evidence in India."

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## POLYGRAPH POLICY MODEL FOR LAW ENFORCEMENT

Вy

## Ronald M. Furgerson

The intense nationwide controversy surrounding polygraph has caused use of the technique, including use by law enforcement, to be subject to intense scrutiny. A number of State legislatures,[1] as well as the Congress of the United States, have passed or are considering bills which impact on and/or could prohibit certain polygraph testing in the private sector.[2] Sentiment for removal of polygraph testing from the arsenal of investigative techniques available to law enforcement has been expressed recently in the media.[3] Also, the interest in polygraph generated by continuing media attention has heightened the vulnerability of policy administrators and polygraph examiners,[4] and even municipalities,[5] to civil/personnel liability actions from citizens who believe their rights were violated, that they were examined using unprofessional methods and procedures, or that they suffered emotional damages.[6]

To preclude legitimate criticism of a polygraph program and to promote the professional and ethical application of the technique, each law enforcement department which uses polygraph should have a well-structured, carefully considered written policy for polygraph usage. That policy, when applied judiciously and uniformly, will do much to allay fears and charges of polygraph abuse and help prevent loss of the technique's availability by legislative action. It will also serve as a ready source of information for investigators and officials who might have questions concerning polygraph usage.

Incorporated into this article is a chart designed to assist law enforcement executives and managers in quickly identifying most, if not all, of the policy areas, plus a few items which follow later in this article, are covered in a department's policy, and if supervisors and examiners adhere to the policies, use of polygraph will be reasonable, appropriate, and defensible.

The comments which follow describe certain aspects of the chart. Numbers appearing in the text correspond to the circled numbers on the chart. Remember that the chart sets out areas which should be addressed in departmental policy. However, suggested policies, examples, etc., contained herein are just that and should not be construed as necessarily the best or only policy which a department should adopt.[7] The best policy for a particular department will depend on many factors and conditions operating within the department.

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## GENERAL POLICY CONSIDERATIONS

<u>Circled Item 1</u>: Departmental policy should specify which individuals in the agency are authorized to approve particular types of polygraph examinations. It is recommended that approval authorities be designated by title rather than by name to preclude having to change the policy document when a new incumbent is appointed to the position.

The rank/position level which is appropriate for approval authority will vary from department to department, depending on such factors as department size, structure, and the confidence the chief policy-making authority of the department has in the officers to exercise sound judgment and discretion in the use of polygraph. Examples of the level of authority which might be appropriate for various investigative applications are set forth in the chart. Because polygraph effectiveness is a function of how and when the technique is used in the investigative process, it is critical that the approval authority be an experienced, mature investigator who has a proven record of investigative insight.

For particular routine polygraph applications, it may be preferable to authorize examinations by use of a standing order or as a matter of departmental policy. For example, if a department requires that all applicants be polygraphed, considerable administrative time will be saved by a standing order prescribing the conduct of the examinations and setting forth how and at what stage in an applicant's processing the examination is to be administered.

# Approval Criteria

When authorizing an examination, the approval authority should:

(1) Determine that investigation by other means has been as thorough as circumstances reasonably permit. Polygraph effectiveness and accuracy are greatest when relevant issues and the examinee's knowledge of the matter under investigation have been narrowly defined and well-defined.

(2) Insure that the proposed examinee has been interviewed and that consistent with the circumstances of the case, the development of additional information by means of polygraph is essential and timely for further conduct of the investigation. Use of polygraph should not be a "last resort" effort to salvage a case. The decision as to when polygraph should be used in the investigative process must be based on individual case circumstances--weighing the exigencies of the situation against the improved capability of the technique to fully resolve issues resulting from greater investigative thoroughness.

(3) Verify that there is reasonable cause to believe the person to be examined has knowledge of or was involved in the matter under investigation, or is withholding information relevant to the investigation. Dragnet-type screening of large numbers of suspects should be avoided.

(4) Consideration should also be given to the following:

- Age factor (a wavier must be obtained from a parent or guardian if a minor is examined);

- Known physical or mental abnormalities;
- Ensuring full security for an examinee in custody;
- Ensuring pending prosecution is not jeopardized; and

- Results of any prior polygraph examinations afforded the examinee.

Although he may not be the final "approval authority" for polygraph examinations, the examiner must make the ultimate determination concerning the suitability of an individual for polygraph testing. Persons who are not sufficiently sound physically or mentally should not be afforded a polygraph examination. Prior to testing, the person to be examined should have had adequate food and rest. The examinee should not, at the time of the examination, be under the adverse effects of alcohol, narcotics, drugs, stimulants, or sedatives. During the pretest interview, the examiner should determine whether the person to be examined is presently receiving or has in the past received medical or psychiatric treatment or consultation.

If the examinee exhibits symptoms of mental or physical fatigue, narcotics addiction or the influence of intoxicants, a mental disorder, etc., the polygraph examination should not be conducted if, in the examiner's opinion, the condition would inhibit the individual's ability to respond or otherwise cause the individual to be an unfit candidate for examination.

A mental disorder could cause the examinee to lose contact with reality or become violent during the test, and an examinee experiencing physical discomfort, disabilities, or defects may suffer abnormal physiological reactions to the test. If the examiner has any doubt concerning the ability of an examinee to safely undergo examination, an opinion/statement should be obtained from the examinee's physician before proceeding with the test.

Finally, polygraph examinations should be given only to individuals who freely and without threat or coercion consent in writing to be examined and who cooperate with and follow the examiner's instructions during the examination process.

#### Issues

<u>Circled Item 2</u>: Matters discussed with examinees during the polygraph interview and questions asked during the actual testing must be scrupulously limited to the matter under investigation and items strictly pertaining to the actual conduct of the examination. The examiner must avoid any suggestion of impropriety or appearance that any part of the examination process is being used to elicit unrelated personal information or to satisfy the examiner's curiosity. Historically, the failure of examiners to exercise good judgment in the matters they discuss with examinees has been a primary source of criticism concerning polygraph.[8] It is important, therefore, that departmental policy identify those issues which are not to be addressed unless they are (in a particular case)

directly relevant to the investigation. Religious beliefs or affiliations, beliefs and opinions regarding social matters ( $\underline{e} \cdot \underline{g} \cdot \underline{g}$ , integration, abortion, unions, political preferences, etc.), and information concerning sexual opinions and practices are examples of areas which should be avoided.

## Use of Polygraph Examination Results

<u>Circled Item 3</u>: Departmental policy should recognize that polygraph is not a perfect investigative process and that polygraph results, both examiner opinions following chart evaluation and (even) confessions and admissions obtained from examinees, are subject to error. Therefore, results should be considered in the context of a complete investigation. They should not be relied upon to the exclusion of other evidence or used as the sole means of resolving questions of verity. Absent prior stipulated agreement with a defendant and his counsel, polygraph examiner opinions as to truth or deception, based upon interpretation of polygraph charts, are not intended for use as evidence in criminal, civil, or administrative courts. Statements, admissions, confessions, etc., made by examinees during a polygraph examination are normally admissible.[9]

# TYPE INVESTIGATION

There are basically five types of polygraph usage which are common in law enforcement and which should be addressed from a policy standpoint, namely, applicant testing, internal investigations, criminal/law enforcement investigations, examinations conducted as a service to other agencies, and examinations of convicted subjects. If polygraph is not permitted in certain situations by a department, departmental policy should state this specifically. This will preclude the possibility of having an examination administered inadvertently contrary to the "intentions" of management. If certain types of examinations are conducted only on rare occasions or as an exception to general procedures, the written policy should be specific as to the situations wherein use of polygraph could be approved.

#### APPLICANTS

It has been well-documented that polygraph is highly useful in the applicant investigation process, and many law enforcement agencies use it routinely for such purposes.[10] During a recent survey of National Academy students at the FBI Academy, about 50 percent indicated that their departments used polygraph during the applicant investigation process. Its use is predicated on its value in helping to insure the suitability of applicants for law enforcement work (history of criminal or other disqualifying behavior as defined by department policy) and for verifying the accuracy and completeness of information furnished on application forms or statements of personal history or during interviews.[11] It is also believed polygraph serves as a useful deterrent to those seeking to penetrate law enforcement departments for untoward purposes.

<u>Circled Item 4</u>: Departmental policy should be clear as to which classes of applicants are, or may be, required to submit to pre-employment polygraph examinations. Employment application literature and application

# Polygraph Policy Model for Law Enforcement

forms should specify if a polygraph examination will be, or may be, required during application processing and that the purpose of the examination will be to verify the accuracy and thoroughness of information furnished. While this procedure is useful in alerting applicants to the use of polygraph, it also insures uniform application of the technique and acts as a deterrent against the submission of false/incomplete information by applicants. If successful completion of a polygraph is a necessary prerequisite for employment according to departmental policy, all literature concerning employment opportunities should indicate this fact.

Those departments which do not use polygraph as a routine procedure during applicant processing may elect to use it only in those instances when questions concerning the applicant's suitability for employment arise during the background investigation. Polygraph can be very valuable when problems of conflicting information develop and other investigative techniques are ineffective in resolving the matter. Departments using polygraph in this manner should include language in their polygraph policy and/or hiring policy which clearly provides for the use of polygraph on a case-by-case basis as required to resolve background investigation issues.

Once a department decides to use polygraph as part of its applicant processing, policy should be established to define clearly the purpose of the examination and the specific issues to be addressed during polygraph testing. Great care should be exercised in this area to ensure that polygraph is used wisely. Generally, it is preferable that polygraph be used only for those areas of interest which cannot be explored effectively by other means, <u>e.g.</u>, thorough background investigation, appropriate records checks, and medical examinations and psychometric testing or psychiatric interviews.[12] This is consistent with the philosophy that polygraph should be a complement to, and not a substitute for, other investigative techniques, or in this case, for traditional personnel selection methods.

Questions concerning the applicant's basic honesty would be appropriate. As with polygraph examinations conducted for other purposes, questions used for applicant examinations must be reasonable and as unobtrusive as possible and should be such as would be appropriate in any personnel/applicant interview situation, or which could be asked on the department's personnel application form.

# INTERNAL INVESTIGATIONS

Polygraph is often useful in investigations involving law enforcement agency personnel. The majority of these uses occur in situations set forth on the accompanying chart.

### Personnel Security/Integrity Program

Polygraph is used by some departments to insure an employee's suitability for initial or continued assignment to selected special duties,  $\underline{e}$ . $\underline{q}$ ., vice, narcotics, intelligence, organized crime, etc.[13] It is essential that such examinations be administered under a consistent, uniform policy to demonstrate that fairness, not favoritism, is involved in these critical selections. The examination should be concerned only with

the officer's freedom from "compromise" or some other type of coercive influence prior to and/or during the sensitive assignment.

# Criminal Investigation Involving Departmental Officer or Employee (Voluntary)

If an officer or employee becomes involved as a subject or witness in a criminal investigation wherein prosecution is the objective, he or she should be treated the same as any other citizen, insofar as possible use of polygraph is concerned (given only if the employee freely volunteers to take the examination). This is necessary to protect the employee's constitutional rights and permit use of any statements or admissions made during the examination to be entered into evidence. In these situations, as in all other law enforcement applications, it is recommended that no adverse inference be drawn from a subject's refusal to submit to an examination. Adverse inferences may be drawn in administrative inquiries and internal investigations, but refusal to submit to examination in these situations should not constitute the sole basis for disciplinary action. Circled Item 8.

# Internal Investigation/Administrative Inquiry (Required)

Polygraph can be highly useful in investigations involving an employee's conduct where prosecution is not the ultimate objective. For reasons of fairness and to preclude allegations that polygraph is being used to coerce or intimidate an employee, or to otherwise single them out for "special treatment," departmental policy should specify those types of situations which could result in an employee being required to submit to a polygraph examination. It is best if the policy requires the existence of a substantial objective basis (not just a vague suspicion or intuition) to believe that the employee was involved in a serious violation of law or departmental regulation. The types of forbidden activities or situations which might result in a requirement for a polygraph examination should be specified in the policy. Examples of such situations are set forth in the sidebar. Circled Item 6.

### Person Making Allegation

If a citizen or another departmental employee makes an allegation of misconduct against an employee, polygraph may be useful in determining if there is any substance to the allegation. Of course, if it is possible to establish the veracity of the allegation by other means, that course should be followed. But, as is often the case, when a serious allegation is made and other avenues for substantiating its truthfulness are not available, polygraph may be the only viable alternative.

While polygraph has potential application for testing both the accuser and the subject of the allegation, experience has demonstrated the advisability of testing the accuser first. Frequently, persons who are making spurious allegations out of revenge, jealousy, or for whatever motive will refuse to be tested or will admit during testing that the allegations were unfounded. When an accuser does consent to testing, the polygraph process is valuable in that it helps to narrow the issues and eliminate exaggerations and/or partial truths. Another reason for testing the accuser first is that it often permits resolution of the matter without having to unnecessarily subject a valued employee to an examination. It is unfortunate that there will be situations where examination of the employee will be the only viable means for the employee to demonstrate his innocence and clear his name. Yet, it is fortunate that there is a means.

It should be noted that just because a person making an allegation "fails" a polygraph examination, based upon the examiner's interpretation of the polygraph charts, the possibility still exists that there was an element of truth in the allegation. It is possible that an accuser, by either exaggerating the nature and extent of an employee's wrongdoing, or by lying about or denying personal involvement in the wrong-doing, may be found deceptive during the polygraph examination, while actually furnishing some truthful and accurate information about the employee's wrongdoing.

It is also possible that an accuser may honestly believe he is being factual in what he is reporting, and yet be totally mistaken. Because polygraph is only useful in determining the examinee's perception of the truth, and not actual or "ground truth" as polygraph researchers say, the accuser may clear the polygraph as "non-deceptive" with the result that the polygraph findings are misleading. Managers should be aware of polygraph limitations and use good judgment in evaluating and making investigative and personnel decisions based on polygraph findings. Because an element of uncertainty normally exists concerning polygraph chart interpretation and the exact nature of an examinee's psychophysiological responses to questions, it is always recommended that if at all possible, no decisions be made solely on the basis of an examiner's interpretation of polygraph charts.

# Examiner Selection in Internal Investigations

<u>Circled Item 5</u>: For obvious reasons, it is important that examiners chosen to work internal investigation cases be selected with special care. There should never be a compromise concerning the quality of the examiner selected for these types of examinations. The examiner must have impeccable credentials as an examiner and be respected for his competence, integrity, and high ethical standards.

Objectivity and accuracy will be promoted and ethical considerations satisfied by use of an examiner who is not more than slightly acquainted with employees being tested. It is even preferable that examiners not know the accused employee or the person lodging the allegation.[14] To accomplish this, smaller departments may use an examiner from another department or agency,[15] or even to contract for the services of a commercial examiner.

To protect the confidentiality of internal investigations and prevent further embarrassment and extraneous psychological stress to an officer, consideration should be given to having the examination conducted at a site where the testing will not be apparent to fellow employees. Use of an offsite location, when needed, will prevent rumors and unnecessary damage to an employee's reputation.

# LAW ENFORCEMENT APPLICATION

The primary use of polygraph in the law enforcement community is for investigations of criminal violations. All the general policy considerations discussed above apply to these applications, including policy on approval authority and criteria, lilmitations on issues to be addressed, and use of polygraph results and examiner conclusions.

One area deserving special comment is the use of Circled Item 7: polygraph to verify information furnished by citizens and informants, especially those whose reliability has yet to be established or is suspect. Consideration should be given to establishing a policy that requires polygraph be considered prior to significant commitments of manpower or financial resources solely on the basis of unsubstantiated information furnished by citizens or informants. This can be especially useful in matters involving allegations against prominent individuals and public officials whose reputations could be unduly tarnished by the mere existence of an investigation. Frequently, the use of polygraph for such "verification" or "confirmation" purposes will disclose there is no basis for the allegations or that they were grossly exaggerated or distorted. In either case, valuable investigative time will have been saved and possible embarrassment to a citizen of the department will have been prevented.

An interesting application of polygraph is to aid in establishing "probable cause" where a warrant is sought and part or all of the basis for its issuance is predicated on information furnished by an informant or witness of unknown reliability.[16] Polygraph, in this situation, can add weight to the probable cause documentation.

In view of the inherently stressful nature of polygraph examinations, it is recommended that departmental policy prohibit the use of polygraph for the dragnet-type "screening" of large numbers of suspects in criminal investigations. Likewise, the use of polygraph as an expedient substitute for logical investigation by conventional methods should be forbidden. Limiting polygraph usage in this manner will do much to improve its effectiveness.[17]

## POLYGRAPH ASSISTANCE TO OTHER AGENCIES

Occasionally, other departments, law enforcement and otherwise, may request polygraph assistance for one of their investigations or in connection with some type of personnel action. There is generally no reason why the support should not be given, provided the requested examination meets the standards for approval set forth in the policy of the department furnishing the support.

In those situations where polygraph support for particular applications,  $\underline{e} \cdot \underline{q} \cdot$ , applicant processing, is furnished on a routine basis, an interdepartmental memorandum of understanding is appropriate. It should describe the terms of the agreement and the responsibilities of each department.

For polygraph support requests of a nonroutine nature, it is useful

# Polygraph Policy Model for Law Enforcement

for the requesting agency to formalize requests in writing on a case-bycase basis. Requests should set forth the nature of the investigation/inquiry and briefly describe the investigation conducted to that point. The polygraph examiner can be briefed on specific details by an official of the requesting agency most familiar with the case. The formal request should also specify the issue(s) to be addressed, any special precautions or instructions to be observed, and the type of examination report desired. The exact questions to be asked and their wording should be left to the discretion of the polygraph examiner.

When another department requests polygraph support for the first time, or when new requesting officials make their initial requests for support, they should be furnished a copy of the instructions in force at the examining agency so there will be no misunderstanding regarding the policy followed when conducting an examination. It would also be wise for the examiner to brief officials from the requesting agency concerning polygraph theory, limitations and capabilities, and evaluation of polygraph results and examiner conclusions. A briefing is especially critical for noninvestigative agencies whose officials may have no basic understanding of the investigative process and the proper role of polygraph.

# POST-CONVICTION EXAMINATIONS

<u>Circled Item 9</u>: Following their convictions, but prior to sentencing, the examination of defendants may be very useful. Examination results may legitimately influence sentencing and be helpful in a number of post-conviction investigative activities. Examples of particularly good uses of polygraph in post-conviction circumstances are contained in the sidebar.

The use of polygraph following a trial, however, should normally be limited to legitimate, continuing investigative interests. Except under the most compelling circumstances, such as when ordered by a judge, postconviction examinations should not address issues such as the veracity or guilt of the defendant concerning the basic trial issue. Polygraph's proper role is not to usurp the function of the trial process. When polygraph is used as part of a plea or pre-sentencing agreement, the terms of the agreement should be carefully documented and approved by the judge, defense attorney, prosecutor, and the defendant.

## MISCELLANEOUS CONSIDERATIONS

#### Polygraph Consent Forms

In addition to whatever method is used for advising examinees of their constitutional rights, department policy should also include provisions for establishing that polygraph examinations were taken freely and voluntarily. This can probably best be accomplished with a preprinted form developed in cooperation with the department's legal counsel. Consultation with legal counsel is important to insure that all legal requirements, including pertinent judicial precedents from recent court decisions, have been satisfied. As a minimum, a polygraph consent form should establish that the examinee realizes that the examination is to be taken freely and voluntarily, that it will be discontineed at any time at

the request of the examinee, and that the examinee may refuse to answer any particular question during the examination.

In designing a polygraph consent form (or a consent to interview with polygraph form, which may be a more appropriate name), it is also useful to include wording which indicates that the examinee is consenting to an "interview with polygraph" or that the polygraph examination is an interview process which includes the use of a polygraph instrument. The purpose is to preclude misunderstanding concerning the nature of the examination process, which includes pretest and post-test interview/interrogation phases as well as the actual testing phase. The component phases of the polygraph process are described adequately elsewhere.[18] What is critical to understand is that following indications of "deceptive" responses during the conduct of the testing phase, it is normal and proper for the examiner to attempt to determine the nature of any problems the examinee had in responding to the test questions. If sensible and adequate reasons for the observed reactions are given by the examinee, additional tests may be conducted to verify that the examinee has indeed been candid. The test-interview-retest process continues until the examinee either tests non-deceptive or the examiner concludes that deception is the only apparent reason for the noted reactions to relevant questions. Under normal circumstances, there is no requirement that each retesting and/or interview phase be preceded by additional rights advisements. However. any deviation from normal circumstances, such as a significant delay between phases, should trigger consideration as to the advisability of reminding examinees of their constitutional rights.[19]

### Monitoring/Recording Polygraph Examinations

While there is no absolute requirement that polygraph examinations must be monitored, experience has demonstrated that significant benefits may be derived from this practice. There are no appreciable drawbacks to such witnessing.

In attaching the polygraph components, examiners must make physical contact with examinees when placing components to their fingers, arms, and the breast area of their bodies. With female examinees, it is advisable to have a witness to this procedure to assure that the examiner's conduct was entirely proper.

When an examinee is believed to have been less than candid during polygraph testing, an attempt is normally made to elicit truth through questioning and persuasive reasoning. Confessions or incriminating admissions are often made by examinees as a result of this approach. These confessions and admissions are sometimes later retracted, changed, or denied. During the course of examinations, examinees also frequently make subtle, but significant, adjustments to previous statements made during the investigation. For these reasons, it is highly useful to have the case officer present to witness the polygraph interview.

Experience has also taught that witnesses, while of great value, should not be physically present in the polygraph room during the examination process. The examiner must establish rapport with the examinee in an emotionally charged atmosphere. This can normally be accomplished best in

a one-on-one situation with no one else present in the room. Further, deceptive examinees are more likely to tell the truth when confronted with examination results if the case officer, before whom the examinee has previously maintained a facade of truthfulness and cooperation during previous interviews, is not present. Being alone with the impartial and objective examiner presents an optimum opportunity for the examinee to be candid regarding the issue with minimal damage to his self-esteem and pride.

Necessary witnessing of examinations can generally take place free of outside interference or distraction by use of one-way windows and sound reproducing (monitoring) equipment. Some situations, however, involve space limitations and physical conditions which mitigate in favor of closed-circuit television for witnessing.

While, given certain conditions, it may be possible for witnessing/monitoring to be accomplished legally without the knowledge of examinees, there is generally no compelling reason why that practice would be advisable. Experience has shown that advising examinees of the presence of witnesses on monitoring devices prior to the examination has not inhibited or impacted adversely on the examination process.

The notification of witnessing/monitoring of examinations can be accomplished during execution of the advice of rights and polygraph consent process.

In establishing departmental policy, administrators should also consider whether polygraph examinations, or portions of the polygraph examination process, should be recorded. Occasionally, good judgment and/or circumstances, such as a court order, may dictate the advisability of or require recording. In most situations, however, the advantages which would accrue from recording (either audio or video or both) are available through routine witnessing/monitoring as recommended herein, and yet have none of the disadvantages which may be associated with recording. As with any other interview or interrogation situation, many things are said which would be misleading when viewed only in the context of information captured on a recording. Depending on examiner competence and the availability of witnesses who have received special instruction, recording of the testing phase of the examination process could be beneficial by providing a method whereby use of physical countermeasures by the examinee might be better detected.

Therefore, with regard to witnessing/monitoring, it is recommended that absent circumstances which make it impossible or impracticable, polygraph examinations be witnessed as a matter of policy, that such witnessing be accomplished by witnesses located outside the polygraph suite, and that all such witnessing be conducted with the prior knowledge of examinees. Policy should also specify that witnesses are to be limited to those with a legitimate interest in the investigation and/or those who will serve as government witnesses to the examination process. The recording of examinations may be advisable or required in some situations.

## Examiner Competence

As examiner competence is of primary importance in the operation of a successful polygraph program, it is recommended that departments establish minimum (certification) standards for their examiners. The following are suggested:

- Graduation from a reputable polygraph school (The American Polygraph Association accredits polygraph schools which adhere to prescribed curricula and instructor requirements);

- Participation in periodic retraining seminars/courses at established intervals - preferably not to exceed 2 years; and

- Conducting a minimum number of examinations annually (The FBI requires its examiners to conduct a minimum of 48 per year to retain certification).

# Quality Control

Experience has shown the value of quality control as an integral part of law enforcement polygraph usage. In such a program, polygraph charts and documentation are reviewed "in the blind" by another senior and wellqualified examiner to insure that they substantiate the conclusion of the testing examiner as to truth or deception. Departments too small to establish their own quality control program may be able to avail themselves of such a program through cooperation with another department. If it is impossible to obtain a quality control review locally, charts and documentation from particular important cases may be submitted to the FBI for review. They should be sent to: Director, Federal Bureau of Investigation, Attn: FBI Laboratory, Washington, D.C. 20535.

## CONCLUSION

APPROVAL: When authorizing an examination the approving authority 1 should determine that an investigation by other means has been as thorough as circumstances reasonably permit, recognizing that polygraph effectiveness and accuracy are greatest when relevant issues and the examinee's knowledge of the matter under investigation have been narrowly and welldefined. The proposed examinee should have been interviewed, and consistent with the circumstances of the case, the development of additional information by means of polygraph should be essential and timely for further conduct of the investigation or inquiry. There should be reasonable cause to believe that the person to be examined has knowledge of or was involved in the matter under inquiry or investigation, or is withholding information relevant to the inquiry of investigation. The following should be considered:

a. Determine if age is a factor. If a minor is to be examined, ensure a waiver is obtained from a parent or guardian.

b. Are there any known physical or mental abnormalities?

c. If the examinee is in custody, can full security and control be assured? Polygraph 1987, 16(3)

d. Will the use of polygraph jeopardize pending prosecution?

e. What were the results of any prior polygraph examinations afforded the examinee?

Although not the final "Approval Authority" for polygraph examinations, the polygraph examiner must make the ultimate determination concerning the suitability of an individual for polygraph testing. Due to the nature of polygraph examinations, the following guidelines are appropriate:

a. Persons who are not in sufficiently sound physical or mental condition will not be afforded a polygraph examination.

b. A person to be examined should have had adequate food and rest before the examination. Examinee should not, at the time of the examination, be under the effects of alcohol, narcotics, drugs, stimulants, or sedatives. During the pretrial interview, the examiner will specifically inquire of the person to be examined whether he/she is presently receiving or has in the past received medical or psychiatric treatment or consultation.

c. Polygraph examinations will not be conducted if, in the opinion of the examiner, any of the following inhibit the individual's ability to respond or otherwise cause the individual to be an unfit candidate for examination:

 It is apparent that the examinee is mentally or physically fatigued.

2. The examinee is unduly emotionally upset, intoxicated, or adversely under the influence of a sedative, stimulant, or tranquilizer.

3. The examinee is determined to be addicted to narcotics.

4. The examinee is known to have a mental disorder which causes the examinee to lose contact with reality or which would reasonably result in the examinee becoming violent during a test.

5. The examinee is experiencing physical discomfort of significant magnitude or appears to possess disabilities or defects which, in themselves, might cause abnormal physiological reactions.

d. If the examiner has any doubt concerning the ability of an examinee to safely undergo an examination, obtain an opinion/statement from the examinee's physician before proceeding with the test.

<u>2</u> ISSUES: The following issues are not to be addressed unless directly relevant to the investigation or inquiry and then only in keeping with established departmental regulations/policy:

a. Religious beliefs or affiliations;

b. Beliefs and opinions regarding social matters;

c. Information concerning sexual opinions and practices.

<u>3</u> USE OF EXAMINATION RESULTS: Polygraph examinations are aimed at developing information which was unavailable prior to the examination ( $\underline{e},\underline{q},$ , confessions, admissions against interests, the identification of false-exaggerated informant information, false exculpatory statements, false claims by alleged "victims," and the development of additional investigative avenues). Results are to be considered in the context of a complete investigation. They are not to be relied on to the exclusion of other evidence or used as the sole means of resolving questions of verity. Polygraph examiner opinions as to truth or deception based upon interpretation of polygraph charts are not intended for use as evidence in criminal, civil, or administrative courts. Statements, admissions, confessions, etc., made by examinees during a polygraph examination are admissible.

<u>4</u> Employment application literature and forms should specify that accuracy and thoroughness of information furnished on the application are subject to verification by polygraph examination.

5 Selection of a polygraph examiner to conduct examinations of department employees must be handled with special care to insure objectivity. Consideration may be given to using an examiner from another department who does not know the examinee. Also, if the site of the department's polygraph suite is near the examinee's work space and the fact that the employee was being tested would be readily apparent to the employee's peers and fellow employees, thereby unduly increasing the psychological stress on the employee, good judgment may dictate conducting the examination away from the employee's own office/precinct.

<u>6</u> The department must establish the existence of a substantial objective basis to suspect that the employee is involved in one or more of the following situations.

a. The intentional and unauthorized release of sensitive, protected information (including, for example, the disclosure of information which is prohibited by law or regulation) with the reasonable expectation that it would ultimately be disclosed to those from whom the information is protected and would seriously and adversely affect a department function;

b. Serious questions concerning an employee's relationship with or allegiance to an organized criminal element;

c. The illegal or improper exercise of influence, coercive or otherwise, by an individual or group on an employee, which could reasonably be expected to seriously affect or inhibit the employee in the impartial and effective performance of the employee's duties;

d. The intentional and unauthorized destruction, mutilation, alteration, misplacement, taking, falsification, or other impairment of previously existing documents or evidence in the department's possession or control;

e. Use or unauthorized dealing in control substances, as defined

under the Comprehensive Drug Abuse and Controlled Substances Act of 1970, Title 21, United States Code, by department employees during the course of their employment; or

f. The furnishing of false statements or the failure to candidly disclose information concerning prior criminal activities requested during the course of his/her employment processing.

<u>7</u> Use of polygraph should be considered prior to making significant commitments or manpower or financial resources solely on the basis of unsubstantiated information, particularly in sensitive investigations or when information which is to serve as case prediction is not readily verifiable by other means.

<u>8</u> The fact that a subject/suspect was requested to submit to a polygraph examination and refused to do so should not be recorded in any type of investigative report in a manner which could reasonably be construed as prejudicial to the individual.

<u>9</u> Post-conviction continuing investigative interests include investigation to resolve issues that were not central to the issues adjudicated by the jury or court. Examples are:

a. Prejury during trial;

b. Defendant's compliance with plea bargaining arrangements/conditions;

c. Accuracy and completeness of information furnished by cooperating witness; and

d. Validity of extenuating and mitigating circumstances bearing on sentencing considerations.

FOOTNOTES

[1] Norman Ansley, <u>Quick Reference Guide to Polygraph Admissibility</u>, <u>Licensing Laws, and Limiting Laws</u>, 11th ed. (Severna Park, MD: American Polygraph Association, 1987).

[2] H.R. 1524, "Employee Polygraph Protection Act," 99th Cong., 2d Sess. (1986) and S. 1815, "Polygraph Protection Act of 1985," 99th Cong., 1st Sess. (1985). If enacted these bills would prohibit private sector employers from administering polygraph examinations to employees or prospective employees.

[3] Paul Berg, "Plea for More Restraints on Use of Polygraph," <u>The</u> Washington Post, January 13, 1987, Health Sect., p. 25.

[4] U.S.C. sec. 1983 reads: "Every person who, under color of any statute, ordinance, regulation, custom, or usage, of any State or Territory, subjects, or causes to be subjected, any citizen of the United States or other persons within the jurisdiction thereof to the deprivation of any rights, privileges or immunities secured by the Constitution and

	TYPE INVESTIGATION	PREDICATION	APPROVAL AUTHORITY	CONSEQUENCE OF FAILURE TO TAKE OR CIOPERATE DURINGEXAM	o issues	USE OF POLYGRAPH EXAMINATION RESULTS 3	SPECIAL REQUIREMENTS & CONSIDERATIONS	
APPLICANTS	APPLICANT (pre-employment examination)	NEED TO: • Insure suitability • Verity accuracy & completeness of info. on application • Resolve questions or conflicts arising during background investigation	Personnel Officer: Administrative Officer: Personnel Selection Board or Standing Order/Policy	NO IOB a condition of employment	<ul> <li>Freedom from coercive forces</li> <li>History of criminal or other disqualifying behavior</li> <li>Accuracy and completeness of info on application form</li> </ul>	One factor to be considered in SUITABILITY DETERMINATION	Scope of any "lifestyle" questions should be scrupulously limited to those areas of legitimate interest as defined by department policy	
	PERSONNEL SECURITYI INTEGRITY PROGRAM	NEED TO: insure employee's suitability for initial or continued assignment to selected special duties, e.g., vice, narcotics, intelligence, o.c., etc., as defined by department policy	Personnel Officer: Administrative Officer/ Personnel Selection Board or Standing Order/Policy	Denial of Patycipation in or removal frompecial duty or assignment	ISSUES PERTAINING TO SUITABILITY OF EMPLOYEE for assignment to particularly sensitive dutes or freedom from "compromise" prior to or during assignment	One factor to be considered in SUITABILITY DETERMINATION	Exercise special care in selecting polygraph examiner §	
INTERNAL	DEPARTMENTAL OFFICEN/EMPLOYEE (Voluntary)	INVESTIGATIVE NEED Same justification as for use in any investigation	Chief of Police/ Director of Public Satety/ Director:Superintendent of State Police/ Highway Patrol/ State Bureau of Investigation	NODE The officer # employee should be treated the same as any other cate whose submission to an examination is on a volustary basis	Issues relevant to BASIC INVESTIGATIVE THRUST	INVESTIGATIVE DIRECTION	(5)	
NVESTIGATIONS	DEPARTMENTAL OFFICER/EMPLOYEE (Required) Administrative inquiries and Internal Investigations involving certain serious violations of law or policy	Substational objective BASIS TO BELIEVE OFFICENEMPLOYEE MAY BE WITHHOLDING INFORMATION relevant to the matter beng investigated	Chief of Police/ Director of Public Satety: Director of Internal Affairs Division/ Director:Superintendent of State Police/ Highway Patrol/ State Bureau of Investigation	MAY DRAW ADVERSE INFERENCE (but may not constitute sole basis for disciplinary action)	Issues relevant to BASIC INQUIRY/INVESTIGATION	INVESTIGATIVE DIRECTION One factor considered in ADMINISTRATIVE/ DISCIPLINARY ACTION DETERMINATION	5	Ronald M.
	PERSON MAKING ALLEGATION against officer/employee	INVESTIGATIVE NEED Same justification as for other types of investigation	Chief of Police/ Director of Public Safety/ Director of Internal Affars Division. Director?Superintendent of State Police/ State Bureau of Investigation	FACTORTO BE CONSIDERED	Issues relevant to BASIC INVESTIGATIVE THRUST	INVESTIGATIVE DIRECTION One factor considered in ADMINISTRATIVE/ DISCIPLINARY ACTION DETERMINATION	Select polygraph examiner with special care to insure objectivity, possibly an examiner from another department who does not know officer/employee against whom allegation is directed	Furgers
LAW ENFORCEMENT	LAW ENFORCEMENT MATTERS	INVESTIGATIVE/OPERATIONAL NEEDS	Division: District: Precinct Commanding Officer or Chief of Detectives	NORE (8)	Issues relevant to BASIC INVESTIGATIVE THRUST	INVESTIGATIVE or OPERATIONAL DIRECTION	Dragnet-type screening of large numbers of suspects or use as a substitute for logical investigation by more conventional means prohibited	no
OTHER Agencies	ASSISTANCE TO OTHER AGENCIES/ Law Enforcement Departments	LEGITIMATE INVESTIGATIVE NEED when requested in accordance with conditions of interdepart- mental agreements	Chief of Police Director of Public Safety, or Standing Order Policy	Depends uponir/Cumstances and regulation#of requesting agency	Issues relevant to BASIC INVESTIGATIVE THRUST	REPORTED TO REQUESTING AGENCY for appropriate use	Be alert to requests for examina- tions of questionable propriety or having political overtones or implications	
POST	POST CONVICTION/ PRE-SENTECING (continuing investigation)	Required in furtherence of con- tinuing investigative interests	Division: District: Precinct Commanding Officer	MAY INFLUENCE PLEA AND SENTENCING Arrangement	LIMITED TO ISSUES WHICH PREDICATED EXAMINATION Should not address issues adjudicated during judicial proceedings	May influence SENTENCING AND POST CONVICTION INVESTIGATIVE DIRECTION	If exam is conducted as part of a plea or pre-sentencing agreement, terms of the agreement should be carefully documented and approved by the judge, defense attorney and prosecutor	
CONVICTION	POST CONVICTION/ PRE-SENTENCING (Veracity/Guilt of detendant concerning trial issue)	May be ORDERED/REQUESTED BY TRIAL JUDGE OR DEFENSE ATTORNEY	Chief of Police: Director of Public Safety	MAY INFLUENCE POST TRIAL JUDICIAL DETERMINATIONS	Limited to SPECIFIED ISSUES	Possible factor in POST TRIAL JUDICIAL DETERMINATIONS	Polygraph should be used in this manner only under the most compelling of circumstances Polygraph's proper role is not to usurp the function of the trial process	

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laws, shall be liable to the party injured on an action at law, suit in equity, or other proper proceeding for redress." For a discussion on constitutionally based civil litigation against law enforcement officers, see, Jeffrey Higginbotham, "Defending Law Enforcement Officers Against Personal Liability in Constitutional Tort Litigation," <u>FBI Law Enforcement</u> <u>Bulletin</u>, vol. 54, No. 4, April 1985, pp. 24-31, & No. 5, May 1985, pp. 25-31.

[5] A municipality may also be named as a defendant in an action under 42 U.S.C. sec. 1983 charging a constitutional violation only where the individual law enforcement officer's conduct was the result of a custom, policy, or practice of the municipality. For a discussion of municipal liability arising from constitutional tort litigation, see, Daniel L. Schofield, "Law Enforcement and Government Liability: An Analysis of Recent Section 1983 Litigation." <u>FBI Law Enforcement Bulletin</u>, vol. 50, No. 1, January 1981, pp. 26-31.

[6] According to a "News-Line" article, <u>U.S. News and World Report</u>, p. 77, April 1, 1985, "Polygraph tests can cause emotional damage, the Minnesota Court of Appeals declared in affirming a lower court's \$60,000 award against a bank. After depositis were missed, two tellers were asked to take lie detector tests. One began having nightmares in which the polygraph turned into an electric chair. She also was unable to work with money. Psychiatrists testified that the test led to post-traumatic-stress syndrome ..."

[7] For a comprehensive and instructive example of a polygraph program policy statement and implementing instructions, see, Department of Defense (DoD) Polygraph Program Directive, Number 5210.48, December 24, 1984, which established basic DoD policy for polygraph usage, and DoD Polygraph Program Regulation Number 5210.48-R, January 1985. The regulation, which implemented the polygraph policy, specifies the circumstances under which the polygraph may or shall be used, prescribes procedures for conducting examinations, and establishes standards for the selection, training, and supervision of DoD polygraph examiners. The directive and regulation were published in Polygraph Law Reporter, vol. 8, No. 1, March 1985, and No. 2, June 19985, respectively, Norman Ansley, ed., (Severna Park, MD: American Polygraph Association). For another treatment of this subject area, see, Richard O. Arther, "Recommended Law-Enforcement Polygraph Rules & Regulations." <u>The Journal of Polygraph Science</u>, vol. 21, No. 3, November-December 1986. The Journal is published by and available through the National Training Center of Lie Detection, Inc., 200 West 57th Street, New York, New York 10019.

[8] See, <u>e.g.</u>, Stephen Budiansky, "Lie Detectors," <u>The Atlantic</u>, vol. 254, No. 4, October 1984, p. 40.

[9] James K. Murphy, "The Polygraph Technique-Past and Present." <u>FBI Law Enforcement Bulletin</u>, vol. 49, No. 6, June 1980, p. 4. Also, see, <u>Polygraph Law Reporter</u>, Norman Ansley, ed., (Severna Park, MD: American Polygraph Association) for abstracts of Federal and State cases wherein issues related to admissibility of polygraph, or other forms of truth verification, are addressed. [10] Billy Dickson, "Pre-Employment Polygraph Screening of Police Applicants," FBI Law Enforcement Bul., vol. 55, No. 4, April 1986, pp.7-9.

[11] <u>The Accuracy and Utility of Polygraph Testing</u> (Washington, D.C.: Department of Defense, 1984). pp. 9-10. Also see, generally, David E. Nagle, "The Polygraph in Employment: Applications and Legal Considerations." <u>Polygraph</u>, vol. 14, No. 1, March 1985, pp. 1-33.

[12] Frank S. Horvath. "The Police Candidate Polygraph Examination: Considerations for the Police Administrator," <u>Police</u>, June 1972, pp. 33-38.

[13] The value of requiring polygraphs for officers assigned to law enforcement intelligence units is pointed out in <u>Basic Elements of Intelligence: A Manual of Theory, Structure and Procedures for Use By Law Enforcement Agencies Against Organized Crime, E. Drexel Godfrey, Jr., Ph.D. and Don R. Harris, Ph.D., (Technical Assistance Division, Office of Criminal Justice Assistance, Law Enforcement Assistance Administration, U.S. Department of Justice, p. 97, 1971).</u>

[14] Richard O. Arther, "Should a Law Enforcement Polygraphist Examine His Fellow Officers? -- No!" <u>The Journal of Polygraph Science</u>, vol. 9, No. 3, November-December, 1974, pp. 3-4; cf. James C. Young, "Should a Law Enforcement Polygraphist Examine His Fellow Officers? -- Yes!" <u>The</u> <u>Journal of Polygraph Science</u>, vol. 9, No. 3, November-December 1974, pp. 1-2.

[15] Melvin Kilbo, "Interagency Agreement," <u>FBI Law Enforcement Bul-</u> letin, vol. 55, No. 5, May 1986, pp. 14-15.

[16] <u>Herlong v. State</u>, 236 Ga. 326, 223 S.E.2d 672 (1976). In this murder prosecution, it was ruled that the court did not err in admitting evidence that a witness had been given a lie detector test and that warrants were obtained for the defendant immediately thereafter; such testimony was admissible to explain the conduct of police officers.

[17] Supra note 15.

[18] <u>Scientific Validity of Polygraph Testing: A Research Review</u> and <u>Evaluation - A Technical Memorandum</u> (Washington, D.C.: U.S. Congress, Office of Technology Assessment, OTA-TM-H-15, November 1983), pp. 11-25. Also see, Stanley Abrams, <u>A Polygraph Handbook for Attorneys</u> (Lexington, MA: Lexington Books, 1977): pp. 69-97.

[19] While this additional advisement of rights may not be necessary, it may be useful in subsequent legal proceedings in showing that given the totality of the circumstances, there was a knowing and intelligent waiver as required under <u>Miranda v. Arizona</u>, 384 U.S. 436, 86 S.Ct. 1602, 16 L.Ed.2d 694 (1966). See <u>Vassar v. Solem</u>, 763 F.2d 975 (8th Cir. 1985) for the court's discussion on the voluntariness of confessions obtained following the testing phase of polygraph examinations. See also, <u>United States v. Eagle Elk</u>, 711 F.2d 80, 83 (8th Cir. 1983), cert. denied, -- U.S. --, 104 S.Ct. 1015, 79 L.Ed.2d 245 (1984). This court held that the defendant had, prior to his polygraph examination, knowingly and intelligently waived his right to have counsel present at a post-polygraph interrogation.

# POLYGRAPHING THE PSYCHOPATH

## Bу

#### Michael Chimarys

# Abstract

Research papers pertinent to experiments dealing with monitoring arousal and avoidance learning abilities in psychopaths and nonpsychopaths are reviewed. Also included is information on physiological responses within the spectrum of autonomic arousal related to the detection of deception. The reviewed research reflected that the psychopath can be detected during deception as easily as the nonpsychopath. Overwhelming evidence was found to indicate that if tangible punishment conditions are used then sufficient autonomic arousal in psychopaths can be induced for near normal level responses for polygraph recording.

Individuals quoted as authorities in and outside the field of the polygraph profession have the opinion that "a psychopath will defeat you everytime during a polygraph examination." This paper will discuss the logic and scientific work used to establish the premise that a psychopath can defeat the polygraph examiner, if the examiner is not alert. However, it appears that if the examiner is aware of how to effectively deal with psychopaths, he can prevent the psychopathic individual from beating the polygraph examination.

The Mask of Sanity (Cleckley, 1941) was a definitive work on the psychopathic disorder. It listed sixteen characteristics of the primary psychopath. Cleckley identified superficial charm and good intelligence; lack of remorse; failure to learn from previous punishing experiences; and a lack of major affective responses. In addition, the primary or "true" psychopath does not develop the anxiety that a "normal" individual would display in a situation that would require or dictate the use of punishment. Karpman (1941) is considered the first individual to use the term "primary psychopath" in distinguishing individuals that do not appear to display anxiety. Following Cleckley and Karpman's lead many researchers have studied the relationship of the autonomic arousal capabilities in the primary psychopath (PS) and the detection of deception. Cleckley presented the idea that the primary psychopath lives with a very limited range of emotional arousal, and this reduction of affect causes an inability to learn from past experiences. Lykken (1955), working along the same track as that of Cleckley, discovered that primary psychopaths have a reduced ability to develop anxiety concerning threatening situations. The

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situations that Lykken was researching were based on classical conditioning models. According to Lykken, psychopaths were less successful in learning to avoid shock punishment. Lykken's research has implication in explaining some of the reasons for recidivism. As expected, if an individual does not learn from their past experiences then they will continue to perform those behaviors that sent them to prison the first time, as happens with the primary psychopath.

Research has produced conflicting evidence pertaining to the arousal and avoidance learning ability in the primary psychopath. Hare (1968) reported conflicting results within the spectrum of autonomic arousal. Lippert (1963), reported lower physiological activity for spontaneous GSR (galvanic skin response), but not for basal conductance. Quay and Hunt (1965) found conflicting evidence for physiological reactivity and adaptation. Hare (1965) found conflicting evidence for basal conductance and autonomic anticipation but not for reactivity.

Research by McCord and McCord (1964) revealed psychopaths to be physiologically more responsive to environmental changes. Schachter and Latane (1964) published findings that primary psychopaths displayed an elevated physiological arousal condition when compared with a normal group of subjects. Schachter and Latene (1965) posited that primary psychopaths do not experience the anxiety required to develop avoidance learning.

Studies by Persons and Bruning (1966), Bernard and Eisenman (1967), and Hetherington and Klinger (1964) cited evidence from experiments that indicated psychopaths were equal to, or superior to, normal subjects in avoidance learning. Schmauk (1970) conducted research using three equally matched groups that were primary psychopaths, neurotic psychopaths (NP) and normal individuals (NI). The groups were then broken down into three The subgroups were given three different types of punishment subgroups. conditions: physical punishment (PP), tangible punishment (TP) and social punishment (SP). All subjects were administered a task to complete in an avoidance learning experiment. Each time a mistake was made by a subject, as previously agreed on, punishment was administered using one of the following forms: (1) TP: the experimenter (E), took away one quarter from Subject's (S) starting pile of 40 quarters every time subject pressed the punishment lever or, if they were able to complete the problem without making any mistakes, they could keep all of the quarters. (2) SP: the experimenter said "wrong" in a disapproving tone when the subject pressed the punishment level. (3) PP: the subject's run under this condition were administered the electric shock, which was adjusted to a level, they related as "painful." The GSR was monitored throughout the experiment with each subject. The GSR level of each subject was measured prior to each lever being pressed and the subjects would say aloud which lever they would press. The GSR change associated with the verbal choice prior to pressing the lever was judged to be "autonomic anticipation" and, the GSR change associated with the punishment administered after pressing the lever was judged to be the "autonomic reactivity."

Schmauk's experimental findings were surprising in that there was no difference in avoidance learning among the groups under the tangible punishment condition. When the results were compared within groups and across the form of punishment that was administered the most important

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result was discovered. Schmauk's findings revealed that the primary psychopaths learned to avoid punishment better with tangible punishment than with physical punishment. It was discovered that the neurotic psychopaths learned best during the tangible punishment condition. According to Schmauk's work the control subjects learned equally well with each of the three forms of punishment that were used.

Schmauk predicted that the primary psychopath would, (a) learn to avoid better if a tangible punishment condition was used, and (b) that they would be less aroused when social punishment and physical punishment were used. Schmauk did find that autonomic anticipation in the primary psychopath was greater under the tangible punishment condition than when the social punishment or physical punishment conditions were in effect. The normal control subjects demonstrated a larger autonomic anticipation than the primary psychopaths under those conditions. However, the two groups were approximately equal in their anticipation when tangible punishment was the enforcing method and loss of money was involved.

Schmauk also measured all subject's awareness of the punishment contingency. This was effected by using the Fisher's exact probability test. The analysis of the data revealed that the primary psychopaths were more aware of the punishment contingency when tangible punishment was used as compared to physical punishment. When the social punishment method was used the normal control group was aware of the contingency more than the primary psychopathic group. GSR anticipation was higher in the primary psychopath and neurotic psychopath when tangible punishment was in effect. However, in the normal control group, GSR anticipation was higher when social punishment was utilized. GSR reactivity was higher across all groups under the electrical shock form of punishment.

The reading of Schmauk's study revealed his basic research was directed at comparing mean scores of avoidance learning, autonomic anticipation, labeling and awareness of the punishment contingency. His findings were that the primary psychopathic group produced higher scores on the above mentioned measures when the tangible punishment was used as opposed to the physical punishment and social punishment. Additionally, the scores for the primary psychopath using tangible punishment were of no significant difference when compared to the scores of the normal control group when using tangible punishment of the four dependent measures.

Schmauk advised that primary psychopath scoring lower on manifest anxiety scales establish that only a few stimuli are able to generate anxiety in them. Referring to Schmauk, this does not mean that primary psychopaths can not develop anxiety. What it does mean is that psychopaths can become anxious as normal individuals, if the correct stimuli out of the many possible anxiety developing stimuli is selected. In Schmauk's experiment, the loss of money became the most effective stimuli for the primary psychopath being tested.

As pointed out by Schmauk, the single most important result of his experiment was the discovery that primary psychopaths can learn to avoid punishment as equally as normal individuals, "if the punishment is appropriate to their value system" (Schmauk, 1970, p. 334).

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Additional research has found that psychopaths have thresholds for electrical stimulation that closely equals that obtained with nonpsychopathic subjects, and the ability to withstand higher levels of pain than the normal individual. This was the result of experiments which attempted to keep psychopaths from becoming bored and inattentive (Hare, 1970). The results of this and another study (Hare, 1968), found a relationship between motivational and procedural factors involved in the performance of psychopaths on tasks that need sustained arousal and attentiveness.

Lykken (1955) conducted polygraph testing experiments of psychopathic and nonpsychopathic individuals. His research required the subjects choose a number between "1" and "5" and then they were to attempt to conceal the correct choice from the examiner. Each subject in this study was examined while their electrodermal responses were being recorded. Lykken reported that nonpsychopathic criminals and noncriminal subjects produced larger electrodermal responses. There are several confounds in the method used by Lykken to obtain his information. Lykken did not use currently accepted polygraph examination techniques in testing his experimental subjects. Lykken posited that psychopathic criminals are electrodermally hypo-reactive under some experimental conditions. Lykken's position would be more enhanced if only the GSR measure is used in determining deception or no deception.

The study conducted by Raskin and Hare (1978) recorded responses in respiration, cardiovascular and electrodermal areas. They only scored the first series of three for each of their subjects. The results were 81% correct, 2% wrong and 17% inconclusive. If the inconclusives are not included the accuracy rate was 96%. Ground truth (knowing if the subject being tested did or did not commit the offense being tested) was known in their study, but not known to the experimenters who conducted the tests. The Raskin and Hare (1978) study also revealed that none of the "guilty" subjects were able to produce truthful responses. In addition, there were no significant differences in accuracy rates for either psychopaths or nonpsychopaths. Also, it was documented that psychopaths at the far end of the diagnostic scale displayed significant electrodermal deflection when they lied to the relevant questions. Raskin, et al. (1978), reported that psychopaths were as responsive as nonpsychopaths and that sufficiently aroused or properly motivated psychopaths are not hypo-reactive.

In a response to Lykken's (1978) challenge of Raskin and Hare's (1978) research, Raskin pointed out "actually, detection of deception does not depend on the presence of fear or guilt but merely on a concern about the adverse consequences of being detected in deception. Whether the consequences are the loss of a reward of \$20.00 (one month's pay for full-time work for those prison inmates) or the failure to avoid prosecution, or the loss of freedom resulting from criminal conviction, psychopaths and nonpsychopaths show consistent reactions which accompany deception to relevant questions" (Raskin, 1978, p. 144).

In a study conducted by Barland (1975) 77 criminal suspects involved in 67 different crimes were examined using recognized polygraph procedures and equipment. Recordings were made of the respiratory, GSR and cardiovascular activity. During the pretest interviews of the majority of the 52 criminal subjects the Minnesota Multiphasic Personality Inventory

(MMPI) L-scale, K-scale, and Hypochondriasis (Hs) scale were orally administered. Barland's testing of actual criminal subjects was something that prior studies had not done. A confound with Barland's study was that he did not have ground truth information about his subjects. If he had that information then he would not have been testing actual criminal suspects. Another confound was that the subjects of Barland's study were not clinically diagnosed to determine if they were psychopathic or nonpsychopathic. An important area of Barland's research was to determine if psychopaths and nonpsychopaths could be successfully labeled either deceptive or nondeceptive. Barland tested the subjects in his study by recording their respiratory, GSR, and cardiovascular physiological changes. Following the testing of 49 deceptive subjects who made confession or other forms of admissions of guilt, a t-test was performed on the mean of their polygraph The results indicated that the differences were insignificant. scores. In addition, the scores from the Pd scale (MMPI) were used to separate the 49 DI subjects into two groups. Those with high and low-Pd scores. То insure the two groups were correctly and completely divided only the top 15 and bottom 15 scores were used. The top 15 scoring individuals were labeled the psychopathic group and the lowest 15 scoring individuals were labeled the nonpsychopathic group. The MMPI is a paper and pencil, true and false self report test used to assist in the evaluation of individuals. The Pd scale (Psychopathic deviance) is used to determine, in a general way, if the individual has psychopathic characteristics. There are better methods to establish if an individual is psychopathic. Barland is not a trained clinical psychologist and chose the MMPI Pd scale to use in attempting to distinguish the psychopathic and non-psychopathic personality. The individual responds to 44 questions on the MMPI Pd scale and their responses are evaluated on the basis of their total responses not on individual responses. The true and false responses are used to determine if the individual being tested either agrees or disagrees with the statement indicated. An example of the type of question asked on the MMPI Pd scale is: "When meeting new people I have difficulty in deciding what I should say to them." The Pd scale response for a "normal individual" would be "true." The psychopathic individual's response would be "false." A "normal" individual "usually does have difficulty in deciding what to say to individuals they meet for the first time; however, the psychopathic individual immediately sizes up an individual and decides what they should say. An analysis of variance was conducted on scores of the two groups and the only difference was in the cardio scores. A second two-way analysis of variance was conducted on the first two charts of each subject's three chart examination (the biggest difference was discovered on the third charts and was attributed to recording error). The second analysis showed no significant differences between the polygraph scores of the psychopathic and nonpsychopathic groups. Barland concluded from this information during his research that psychopaths could be polygraphed as successfully as nonpsychopathic individuals.

Balloun and Holmes (1979) conducted a study with college students who cheated on an experimenter designed bogus intelligence-information test reportedly to rate levels of intelligence. The subjects were talked into cheating on the test by an experimenter confederate. All of the participants of their study were given the MMPI test and eighteen students with a high Pd-scale score were used as were sixteen students that scored low on the Pd-scale. The students took the devised test. The real subjects were

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then asked to participate in additional testing. The real subjects were then administered a test to determine if they have ever cheated on tests at the university. This test was a related form of a polygraph examination. Three physiological measures heart rate, finger pulse volume and skin resistance were recorded during this testing and evaluated. The test was not a control question form of test as only relevant types of questions were asked. The findings of this study revealed that (1) cheaters had significantly higher detection scores than noncheaters, and (2) there was no overall differences between skin resistance scores of high- and low-Pd Subjects.

A study by Patrick and Iacono (1986) concerning the use of the polygraph test on psychopaths was carried out in the same setting used in the Raskin and Hare (1978) study. The subjects for their study were 24 psychopathic and 24 nonpsychopathic male prisoners. All of the psychopathic subjects met the DSM-III criteria for Antisocial Personality Disorder. All psychopathic subjects case records were reviewed independently by two trained diagnosticians. Only the inmates that met total agreement by both reviewers as either psychopaths or nonpsychopaths were used for the study. The subject's personal rewards for taking part in the study were considered small. However, the subject's personal potential consequences for failure were considered to be more negative. This was effected by basing the reward for the group participants on each individual's performance. The participants were told that their group would not be rewarded and the names of the individuals failing the test would be provided to the entire group. The results of their study revealed that only 2 of the 12 guilty psychopaths and 1 of the 12 guilty nonpsychopaths, were able to "beat" the examinations. The combined accuracy rate for both groups was 87%. The results on the innocent subjects examinations showed only a 56% accuracy The conclusion was that guilty psychopaths were as easily disrate. covered as guilty nonpsychopaths.

In a study carried out by Waid, Orne and Wilson (1979) 15 college students attempted to deceive a polygraph examiner and another group of 15 college students having nothing to hide were also examined. In this study it was discovered that the guilty individuals that scored low on the Socialization Scale of the California Psychological Inventory and therefore considered to be less-socialized were not as responsive as the guilty individuals scoring higher and being considered highly socialized. This study only used the GSR recording to determine if the examinee was being deceptive or non-deceptive. This study indicates that the GSR in lowsocialized individuals is hypo-responsive, however, no information is provided on the respiration and cardiovascular recording areas. In addition, the examinees did not expect to be punished or lose anything tangible if they did not defeat the polygraph examination.

In a paper presented to the Society for Psychophysiological Research in Montreal, Canada; Fedora, Morrison, Reddon, Thauberger and Davies (1986) reported research on electrodermal and heart rate responses to anticipatory and nonanticipatory stress in psychopaths. Their study used 31 normal individuals as the control group; 28 psychopathic inmates and 28 nonpsychopathic inmates. The psychopathic subjects selected for the study were used if they met the same criteria as used in Hare's 1980 study. The subjects used were also classified on the basis of their California Psychological Inventory Socialization scores into low and high (So) subgroups. All subjects were told that an electrical shock would be applied following a certain number. The numbers were presented sequentially for 1.6 seconds following the viewing of the identified number the subjects were shocked. The results of this study showed no significant differences in the electrodermal and heart rate responses between the psychopath and nonpsychopathic groups.

#### DISCUSSION

Based on the results of scientific investigation concerning the polygraphing of psychopathic individuals it is logical to state that using the proper description of the punishment which the individuals can expect as a result of their actions, if discovered during a polygraph examination, psychopaths will be better subjects for polygraph examinations. If an individual that is to be polygraphed has an extensive history of involvement in illegal activity, lying, several arrests or other indicators of antisocial behavior, that individual may be considered to fit the general description of the psychopathic personality. A true psychopath can not be identified by merely looking at them. A properly trained and skilled psychologist or psychiatrist must test and evaluate the individual to make a determination. However, if a polygraph examiner has a complete background file on the individual being tested and the information contained within that file establishes a relationship to the diagnostic criteria in the DSM-III to identify a psychopath (see appendix) then the examiner can skillfully administer a valid polygraph examination to that individual by making adjustments to their pre-test. The polygraph examiner should emphasize that the examinee will lose the things of value that are important to him. The things valued are tangible reinforcers for that examinee, and relate to the consequences of not passing the polygraph examination. Based on research it is expected that the psychopathic subject will be sufficiently aroused to respond adequately. The psychopath's psychological arousal will provide adequate physiological responses to allow a correct determination of the polygraph examination results of either "deception" or "no deception indicated."

This paper has presented results of scientific studies concerning the psychopathic individual as a subject of polygraph examinations following either "mock" crimes or actions that are not socially accepted. The results of these studies revealed that the psychopathic individual can, if properly tested (using the correct stimuli for that individual) be as good a subject as the non-psychopathic individual. This paper, and the cited studies, are not conclusive evidence that "if the described procedures are used the psychopathic subject will certainly be discovered if deceptive during a polygraph examination." Such an extreme position was not the goal of this paper. Rather, this paper has pointed out that under the correct conditions using a minor modification in the pre-test, the psychopath, a specific type of personality previously considered not suitable for testing, may be a good subject for a polygraph examination.

## APPENDIX

The psychopathic personality which is listed as "Antisocial Personality Disorder" in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) must meet the following diagnostic criteria:

A. Current age at least 18 and a history of continuous and chronic antisocial behavior in which the rights of others are violated.

B. Onset before age 15 as indicated by a history of two or more of the following:

- (1) Truancy.
- (2) Expulsion from school.
- (3) Delinquency (arrested or referred to juvenile court because of behavior).
- (4) Running away from home overnight at least twice while living in parental or parental surrogate home.
- (5) Persistent lying.
- (6) Unusually early or aggressive sexual behavior.
- (7) Unusually early drinking to excess, or substance abuse.
- (8) Thefts.
- (9) Vandalism.
- (10) Required to repeat school grades or grades below what would be expected on basis of estimated or known IQ.
- (11) Chronic violations of rules at home and/or at school (other than truancy).

C. At least three of the following since age 15:

- (1) Poor occupational performance over several years as shown by either:
  - (a) Frequent job changes (three or more jobs in five years not account for by nature of jobs or economic or seasonal fluctiation);
    - (b) Significant unemployment (six months or more in 10 years when expected to work);
  - (c) Serious absenteeism from work (average three days or more per month--late or absent).

NOTE: Poor academic performance for the last few years of school may substitute for this criterion in individuals who by reason of their age or circumstance have not had an opportunity to demonstrate occupational adjustment.

- (2) Three or more non-traffic arrests, or a felony conviction.
- (3) Two or more divorces and/or separations (whether married or not).
- (4) Repeated physical fights or assaults (not required by one's job or to defend someone or oneself).
- (5) Repeated thefts, whether or not caught.
- (6) Illegal occupation (<u>e.g.</u>, prostitution, pimping, selling drugs).

- (7) Repeated defaulting on debts or other major financial responabilities, such as child support.
- (8) Traveling from place to place without a prearranged job or clear goal for the period of travel or clear idea when the travel would terminate.

D. No period of five years or more without antisocial behavior between age 15 and the onset of adult antisocial behavior, when the individual was not bedridden, confined in hospital or penal institution, or under treatment.

E. Antiscoial behavior is not symptomatic of either severe Mental Retardation, Schizophrenia, Schizoaffective, or Paranoid Disorder.

The criteria listed above is used by trained diagnosticians in determining if an individual meets the requirements of being classified as psychopathic.

#### GLOSSARY

DI: deception indicated. E: experimenter. GSR: galvanic skin response. INC: inconclusive (unable to determine if DI or NDI). NDI: no deception indicated. NI: normal individuals. NP: neurotic psychopaths. PP: physical punishment (electric shock). PS: primary psychopath. S: subject SP: social punishment (E saying "wrong"). TP: tangible punishment (loss of money).

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# THE VALIDITY OF THE POSITIVE CONTROL PHYSIOLOGICAL DETECTION OF DECEPTION TECHNIQUE

Вy

Lawrence N. Driscoll, Charles R. Honts, and David Jones

The control question test for the physiological detection of deception has been demonstrated to be a valid technique for assessing a person's veracity in the laboratory (Bradley and Janisse 1981; Dawson 1980; Kircher, Raskin, and Honts 1985; Podlesny and Raskin 1978; Raskin and Hare 1978), and it is generally the technique of choice in forensic polygraph examinations conducted in the field (Raskin 1982). However, considerable controversy still surrounds the validity of the control question test in the field application (Office of Technology Assessment 1983).

The control question test assesses veracity by comparing an individual's physiological responses to relevant and control questions. Relevant questions deal with the issues of the investigation or accusation (for example, Did you take that ring from the secretary's desk?). Control questions are designed and presented so that the subject is either deceptive or at least uncertain about the veracity of his answer (Raskin 1982; for example, During the first 18 years of your life, do you ever remember stealing anything?). The rationale of the control question test predicts that guilty individuals will show larger physiological responses to the relevant questions while innocent individuals will show larger physiological responses to the control questions, and that prediction has been supported in a number of reports (Bradley and Janisse 1981; Dawson 1980; Kircher, Raskin, and Honts 1985; Podlesny and Raskin 1978; Raskin and Hare 1978).

Some critics question the rationale of the control question test. Lykken (1981) has expressed doubts that field examiners can construct control questions that will produce substantial physiological responses in innocent subjects accused of serious crimes. On the other hand, some field examiners have criticized the control question test because they state that control questions can be formulated so that they represent a more serious threat to the guilty individual than do the relevant questions. That might allow guilty individuals to produce truthful results even though they are deceptive to the relevant questions of the examination (Minor 1985).

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One result of the controversy over the control question test has been the development of several alternative examination techniques. One of those alternative techniques is the positive control technique (Golden 1969; Gordon and Cochetti 1982; Howland 1981; Reali 1978). Proponents of the positive control technique allege that it avoids many of the problems associated with the control question test by presenting relevant and control stimuli that are inherently balanced in their power to elicit physiological responses.

The positive control test essentially asks only relevant questions. but asks each question twice with different instructions regarding the answer. The first time the question is asked the subject is instructed to admit the acts in question; this is referred to as the subjective lie The second time each question is asked the subject is inquestion. structed to deny the acts in question; this is referred to as the subjective truth question. The two presentations of a relevant question are referred to as a positive control pair. The rationale of the positive control test predicts that subjects will produce larger physiological responses when they are actually lying. Thus, if subjects show larger physiological responses to the subjective lie, that is, when they say they committed the crime, they are interpreted as truthful with regard to the issues of the examination. When subjects show larger physiological responses to the subjective truth, that is, when they say they did not commit the crime, they are interpreted as deceptive to the issues of the examination.

The positive control test has gained some acceptance among field examiners, and is currently being taught in at least two examiner training schools. However, to date no experimental data have been presented concerning the reliability and validity of the positive control test in comparison to the control question test in a laboratory mock crime experiment.

#### METHOD

#### Subjects

Forty-one male subjects were recruited from group counseling sessions at the Veteran's Center in downtown Pittsburgh. Thirty-seven of the subjects were Vietnam veterans and 4 were non-veterans. One subject was eliminated from the experiment because a hearing problem made it impossible to conduct the examination. Ages ranged from 22 to 43,  $\underline{M} = 33$ , and years of education ranged from 9 to 21,  $\underline{M} = 13.3$ . All subjects were paid \$5.00 for their participation and were offered an additional \$5.00 bonus if they produced a truthful outcome on the polygraph examination.

### Apparatus

Physiological recordings were made with a Stoelting Polyscribe, Model 22770, field polygraph instrument. The instrument recorded relative blood pressure from an inflated cuff placed on the subject's upper left arm. Electrodermal activity in the form of the skin resistance response was recorded in DC mode from two flat plate stainless steel electrodes placed on the palmar surfaces of the middle and ring fingers of the subjects left

hand. Respiration was recorded from a pneumatic tube placed around the subject's abdomen. Subjects were tested in a suite designed and used for field polygraph examinations.

#### Procedure

Potential subjects were initially contacted through an announcement during group counseling sessions. Individuals who expressed an interest in participating were instructed to telephone the examiner's place of business to schedule an appointment, and to receive additional instructions. When they phoned, subjects were instructed to report to another building about 15 minutes prior to the time they were scheduled for the polygraph examination. When subjects arrived at this building they were greeted, and were randomly assigned to one of four treatment conditions by means of predetermined running order. One half of the subjects were assigned to guilty conditions and, within guilty and innocent conditions, subjects were assigned to be given either the positive control or the control question test first.

Innocent subjects were given a typed sheet that told them that a ring had been stolen from a secretary's desk, that they were a suspect, and that they would be given a polygraph examination about the theft of the ring. They were then instructed to proceed to the polygraph firm's offices for the examination. They were instructed to tell the secretary that "Dave Mac sent me" and were to then take the examination when the examiner was ready.

Guilty subjects were given a typed sheet and also listed to a tape recording of their instructions. They were instructed to go to the offices of the polygraph firm and to tell the secretary that "Dave Mac sent me." They were then instructed to wait until the secretary left the room. They were then to go to the secretary's desk and to remove a ring from the middle drawer. They were cautioned not to be discovered in the act of taking the ring, and were told to develop an alibi. Guilty subjects were told to hide the ring on their person and to wait to take the polygraph examination. They were told to deny taking the ring and were cautioned that if they admitted taking the ring or gave themselves away before the conclusion of the polygraph examination they would be disqualified from receiving the bonus.

At the time they received their instructions all subjects were given a code, either Z or P-C. Subjects were instructed to give this code to the polygraph examiner at the beginning of the examination. This code instructed the examiner to either give the control question test or the positive control test first. One half of the innocent and guilty subjects received the control question test first.

All examinations were conducted by the first author. He is a field polygraph examiner with 10 years' experience in the conduct and evaluation of polygraph examinations, and has received formal training in both the control questions and positive control tests. All examinations were given using the standard field practices associated with the various techniques. The relevant questions used in both types of test were:

- R1. Did you take that ring from the secretary's desk?
- R2. Regarding that ring missing from the secretary's desk, did you remove that ring from her desk?
- R3. Do you know exactly where that missing ring in question is right now?

Physiological data were obtained from three presentations of the questions of each test type. In both types of examination the order of question presentation was varied slightly from chart to chart. During the second chart of the positive control examination the subjective truth and the subjective lie questions were reversed in order, and they were returned to their original order for the third chart of the positive control series.

At the conclusion of the sixth chart the examiner numerically scored all of the charts using the semiobjective numerical scoring procedures developed at the University of Utah (Podlesny and Raskin 1978; Raskin and Hare 1978). The following characteristics were utilized to assess the strength of the responses: skin conductance response amplitude and duration; respiration decrease in amplitude, slowing, and baseline increase; and diastolic blood pressure increase and duration. In evaluating the control question test data each pair of control and relevant questions was assigned a score from -3 to +3 for each of the physiological systems. The magnitude of the numerical score was dependent upon the magnitude of the difference between the physiological responses to the two question types. Positive scores were assigned when responses to control questions were stronger, and negative scores were assigned when the responses to relevant questions were stronger. Scores were then summed for the nine relevantcontrol pairs and decisions were based on those total numerical scores. Total numerical scores greater than +5 resulted in a decision of "truthful" and scores of less than -5 resulted in decisions of "deceptive." Total numerical scores of less than 6 in either direction were considered inconclusive. The charts generated by the positive control examinations were scored in a similar manner with the subjective lie question function as the control item. The physiological charts were also scored by another experienced field polygraph examiner who had no contact with the subject or information regarding the subject's guilt or innocence. One year after the conclusion of the experiment the original examiner performed a blind rescoring of the charts with the charts recoded so that the examiner was no longer aware of which positive control and which control question test charts were from the same subject.

#### RESULTS

The data set generated by the three numerical scorings were not statistically different. Only the data from the original examiner's first evaluation are presented unless otherwise noted. All statistical tests employed a .05 rejection region.

#### Numerical Scores

Mean total numerical scores for group and test type are presented in

Table 1. Those numerical scores were subjected to a repeated measures ANOVA. In that analysis, group (innocent or guilty) and order (control question test or positive control test, first) were entered as between subject factors, and test type (control question or positive control) was entered as a repeated measures factor. Innocent subjects produced significantly more positive total scores than did guilty subjects on both test types as indicated by the strong main effect for group  $\underline{F}(1,36) = 140.1$ . Guilty subjects produced more negative numerical scores when tested with the control question test than when tested with the positive control test as was indicated by the significant interaction of group and test type  $\underline{F}(1,36) = 24.63$ . The main effect for test type approached significance  $\underline{F}(1,36) = 3.88$ ,  $\underline{p} = 0.566$ , indicating that the positive control test tended to produce smaller scores for both innocent and guilty subjects.

#### Table 1

	Gro	up	
Test Type	Innocent	Guilty	
Control Question Test	10.4	-10.7	
Positive Control Test	6.6	- 2.0	

Mean Numerical Scores For Group and Test Type

In order to explore the predictive information content of the numerical scores generated by the test testing techniques, the numerical scores were correlated with the criterion of guilt and innocence. The correlation of the numerical scores generated by the control question test with the criterion was high,  $\underline{\mathbf{r}} = .86$ . That correlation indicates that the numerical scores generated by the control question test accounted for about 74 percent of the variance between innocent and guilty subjects in this experiment. The corelation of the numerical scores generated by the numerical scores generated by the positive control test accounted for only 44 percent of the variance between innocent and guilty subjects in this experiment.

# Reliability

Interrater reliability of the numerical scores was tested by correlating the scores of the original examiner and the independent evaluator. The resultant interrater correlations for numerical scores generated by the control question test ( $\underline{r} = .95$ ) and the positive control test ( $\underline{r} = .84$ ) were strong. Intrarater reliability was tested by correlating the original examiner's first scoring with his blind rescoring. The resulting intrarater correlations for the control questions test ( $\underline{r} = .98$ ) and the positive control test ( $\underline{r} = .87$ ) indicated a great deal of stability to the original examiner's numerical scoring.

# Decisions

The decision of the original examiner based on the numerical scoring of the control question test charts are presented in Table 2. Using the control question test, the original examiner correctly classified 90 percent of the innocent and guilty subjects and 10 percent of his decisions were inconclusive. Excluding the inconclusives, the decisions of the original examiner based on the control question test were 100 percent correct.

### Table 2

Group	······································	Decision		
	Truthful	Deceptive	Inconclusive	
Innocent	18	0	2	
Guilty	0	18	2	

Decisions Based on the Control Question Test

The decisions of the original examiner based on the numerical scoring of the positive control test are presented in Table 3. Using the positive control test, the original examiner correctly classified 65 percent of the innocent and 35 percent of the guilty subjects, and 45 percent of his decisions were inconclusive. Excluding inconclusives, 91 percent of the decisions based on the positive control test were correct. The two errors were false negative errors, accounting for 22 percent of the decisions with guilty subjects.

## Table 3

Decisions Based on the Positive Control Test

		Decision		
Group	Truthful	Deceptive	Inconclusive	
Innocent	13	0	7	
Guilty	2	7	11	

## DISCUSSION

The results of this experiment indicate the positive control test to be an inferior detection of deception technique as compared to the control question test. This finding is indicated by the dramatically increased percentage of inconclusive outcomes for the positive control test (45 percent) as compared to the control question test (10 percent), and in an

increased false negative rate for the positive control test (22 percent) as compared to the control question test (0 percent).

The weakness of the positive control test appears to be that the positive control pair does not provide a set of stimuli that elicit differential physiological reactivity between truthful and deceptive subjects. An examination of the reactions to the subjective truth and subjective lie questions gives some insight into this finding. Despite the predictions made by the rationale of the positive control test, the data indicate that subjects gave larger physiological responses to the first item of the positive control pair regardless of their truthtelling status. Thus, if the order of question presentation had been changed so that the subjective truth question preceded the subjective lie question on two charts instead of just one, it might be expected that the number of false positive errors would increase. In any event, the positive control test was not demonstrated to be a valid discriminator of truthtellers and deceivers.

The results of this experiment bring the field uses of the positive control test into serious question. The positive control test was not demonstrated to be effective in a laboratory mock crime. It is difficult to postulate a rationale for why the technique in the hands of an experienced examiner trained in its use should be unsuccessful in the laboratory, but would be successful in the field. Until the positive control test is demonstrated to be effective, or until it is modified and its validity demonstrated, the positive control test should be abandoned by field polygraph examiners in favor of the control question test.

The results with the control question test add to a considerable body of literature supporting the validity of the control question test for discriminating truthtellers and deceivers (Bradley and Janisse 1981; Dawson 1980; Honts, Hodes, and Raskin 1985; Kircher, Raskin, and Honts 1986; Podlesny and Raskin 1978; Raskin and Hare 1978). The original examiner in this experiment made no errors in his original classifications of the subjects when they were tested with the control question test. Additionally, the measures of inter- and intrarater reliability indicated that the semiobjective evaluation system used by these examiners was very reliable. Those results coupled with the high reliabilities and validities obtained in other well-conducted laboratory studies indicate that the control question test is likely to be a useful forensic tool for discriminating truthtellers and deceivers.

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## ABSTRACTS

# Evidence

Irving Crespi, "Surveys as Legal Evidence." <u>Public Opinion Quarterly</u> 51 (1987): 84-91.

There are occasional circumstances when polygraph related cases may involve the admissibility of survey results. For example, in refuting the <u>Frye</u> decision, it is useful to enter into evidence the Gallup Organization's Survey of Members of the American Society for Psychophysiological Research Concerning their Opinion of Polygraph Test Interpretation." (December 1982)

In this article, Crespi discusses the difficulties encountered in introducing survey results and explaining the difference in the legal methods in establishing truth. The author explains that a survey does not establish relevant or value as evidence. The rules of evidence and precedents are discussed. Although the precedents are specifically related to trademark litigation, the article is valuable in considering other situations.

For copies of reprints, write to Professor Irving Crespi, Department of Marketing, Baruch College, City University of New York.

#### Eyewitness

Vicki L. Smith and Phoebe C. Ellsworth, "The Social Psychology of Eyewitness Accuracy: Misleading Questions and Communicator Expertise." Journal of Applied Psychology, 72 (1987): 294-300.

In two studies they examined the effect of questioner expertise on the error rates of subjects who were asked misleading versus unbiased A total of 105 introductory psychology students watched a guestions. videotaped clip of a bank robbery and were then questioned about the crime. The questioner was represented to subjects as either highly knowledgeable or completely naive about the events the subject witnessed. One half of the subjects in each expertise condition were asked misleading questions, and the other half were asked unbiased questions. In the knowledgeable questioner conditions, misleading questions were associated with error rates significantly higher than those obtained with the unbiased questions (p .05). In the naive questioner conditions, equivalent error rates for both types of questions were obtained (ns). These results indicate that misleading questions decrease witness accuracy when the questioner is assumed to be knowledgeable about the crime, but have no effect on accuracy when the questioner is asssumed to be naive.

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#### Abstracts

#### Questioning and Psychology

Gisli H. Gudjonsson, "Historical Background to Suggestibility: How Interrogation Suggestibility Differs From Other Types of Suggestibility." <u>Personality and Individual Differences</u> 8 (3)(1987): 347-355.

The paper reviews the classical literature on suggestibility and points out that "interrogative suggestibility" has limited relationship to the traditional definitions. The studies of suggestibility have not measured susceptibility to leading questions. While most definitions of suggestibility include some sort of uncritical acceptance of the stimulus, implying limited critical judgement, the definitions do not fit interrogative suggestibility because they do not involve a questioning procedure within a closed social interaction; the questions are concerned with past experiences and events; and it has a strong uncertainty component which relates to the cognitive processing of the individual.

### Skin Conductance and Heart Rate

Donald J. Levis and Jane E. Smith. "Getting Individual Differences in Autonomic Reactivity to Work for Instead of Against You: Determining the Dominant 'Psychological' Stress Channel on the Basis of a 'Biological' Stress Test." Psychophysiology 24 (3)(1987): 346-352.

The purpose of this study was to develop a procedure to increase the reliability of autonomic measures, such as skin conductance (SC) and heart rate (HR), when assessing negative emotional responding. The strategy was to capitalize on the individual difference factor by determining prior to the start of an experiment each subject's most reactive autonomic channel. To achieve this objective, a 'biological' stress test (balloon-burst test) was used. Subjects were then classified by using median-split rank-ordered procedure, as high SC responders, high HR responders, high responders in both channels, or low responders in both channels. The generality of the responder-nonresponder classification was then assessed to a 'psychological' stressor which involved presentations of a fear-eliciting bodily-injury slide. Transfer effects were obtained with those subjects defined as high responders on a given channel displaying greater reactivity on that channel when compared to subjects classified as low reponders. The implications of these findings for clinical research were discussed. [author abstract]

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