



Polygraph Examination: An Aid to Investigation

Deepti Puranik

Assistant Professor, Sunandan Divatia School of Science, NMIMS- deemed to be University
Deepti.Puranik@nmims.edu

Abstract:

Psychological Investigations are significant contributors when it comes to crime investigations as this involved behavioral analysis. Getting truthful information from a potential suspect has been a huge task. Techniques for detecting deception have been a quick and scientific way for assisting investigations. Polygraph is a technique that measures physiological changes in the body when asked questions pertaining to crime. It measures the physiological responses related to Respiration, Electro dermal activity, Blood Pressure and other physiological parameters. Polygraph had always been a popular tool in investigations as it gives scientific evidence in form of physiological changes from the person who may have been suspected to have committed a crime. The current paper does not only focus on Polygraph for criminal investigations but also looks at the diverse application of Polygraph from criminal investigations, to civil cases, to infidelity, to pre-employment and corporate investigations.

Key words: Polygraph Examination, Response conflict, crime investigation, infidelity, pre-employment.

Introduction

Since our childhood, we have learnt 'Honesty is the best policy' from our parents, teachers, and society. Though extremely difficult to define 'Honesty', it has been defined as "Free of deceit; truthful and sincere...Morally correct or virtuous... (attributive) Fairly earned, especially through hard work...(of an action) done with good intentions even if unsuccessful or misguided...(attributive) Simple, unpretentious, and unsophisticated" (Oxford English Dictionary). However, there have been various levels through which we can express Honesty. The first level is could be the awareness of facts as without awareness about the particular issue it cannot move to further levels. At a second level, having the knowledge

pertaining to the facts and at a third level, honesty could be when an individual does not distort the truth in any way for the sake of justification of his or her actions. However, being honest is a responsibility and generally individuals distort the honest responses by justifying the rationale behind these distortions (Mukundan, 2007).

Since centuries, human beings have given a lot of importance to this value and looked at different ways to identify if an individual is being honest or deceptive. Ancient countries were using unscientific methods for the purpose of lie detection. Most of these techniques would be considered extremely cruel and irrational, worse than 3rd degree techniques. Ancient countries referred to them as various ordeals some of which were by fire, some by water and few through wars between opponents. It was always believed that truth prevails, so an innocent person would always pass these ordeals. The ordeals have been mentioned even in our Hindu literature and a famous example can be expressed through Agnipariksha which in literal sense is Ordeal by fire. To prove her conjugal fidelity Sita had to undergo Agnipariksha on return to her homeland Ayodhya from Lanka. Judicium Dei has been the basis of these ordeal which emphasis that the truthful person would be saved by miracle by God. Keeping aside the unscientific manner in which, these techniques were used and some of them being extremely cruel and against human rights. However, even today, people give lot of preferences for loyalty in relationships especially in Indian Cultures. In-fact couples have been using detecting deception such as Polygraph to get clarity on issues that have been source of conflict in their relationships.

Since the development of Polygraph almost a century before, the interaction of emotions and physiology was well established with giving higher emphasis to the emotion of guilty mind. The fear of being caught leading to physiological changes can be understood through "Flight and Fight Theory" which is well established in the stress theory (Vaya 2007).

Understanding Response Conflict: Theoretical basis of response conflict needs to be understood in detailed if we have to understand the science behind honest responses and dishonest responses. The response conflict may be for selecting from "(1) several preferred responses, when many have a preferred

aspect, (2) between a preferred response and an appropriate response, when the preferred is not the appropriate, (3) several appropriate responses, and (4) from in-competitive responses in the absence of a preferred response". Anterior Cingulate exerts a supervisory control of our actions by weighing advantages & disadvantages and the consequences. It also helps us to resolve conflicts by choosing the best option available in a given situation. Conflict resolution by the Anterior Cingulate causes the Autonomic Nervous System to get aroused leading SNS to take necessary action (Mukundan, 2007).

The anxiety that may occur due to fear of being caught would lead to emotional disturbances and is much stronger in comparison to the actual guilt pertaining to the crime conduction. These emotional disturbances leads to physiological changes which may be measured by Polygraph and is a well-accepted theory globally (Krishnamurthy, 2011). Current scenario has shown planning in most of the criminal cases as was indicated through crime scene investigation with the offender portraying no remorse for their actions. The guilt as well as fear and anxiety seem to be missing in these individuals thus indicating better understanding of actual practice of Polygraph in these cases. Deception cannot be analyzed without understanding the conflict of brain that is the core to response conflict paradigm. Physiological changes occurs due to stress which is directly related to the need of concealing the truth. This would occur only when the brain compares the advantages and disadvantages of the consequences of the actions committed. In general, the criminal would be punished by the society and it affects their self-esteem and well as future as very rarely someone may give jobs to ex-offender. This mostly becomes the reasons for the individual to hide the reality to avoid social rejection. Further, individual is well aware of the legal aspects when they know the only on the basis of enough evidence will the person be punished. This further motivates the individual to hide information about the crime and do not confess easily. A perpetrator may not display discomfort once he feels he has succeeded in hiding and destroying evidence. Hence, in a controlled environment the examiner questions the individual and simultaneously measures the physiological changes that are occurring in the body to look for deception associated changes in the body which are not directly associated but associated through brain body connections. This brain body connection is important when the person makes decision of responding by

interpreting the questions and concealing the truth. Mukundan (2007) stressed the association of autonomic functioning of physiological responses with the actual experience of conflict.

In detection deception paradigm, newer techniques such as Brain Electrical Oscillation Signature Profiling, fMRI-based Lie Detection, Thermal imaging Lie-Detection, Layered Voice analysis etc. have also been in use especially in cases of crime. These techniques use Physiological or Neuropsychological correlates to measure lie and experiences pertaining to a particular episode which is in question. Certain recognizable external symptoms are considered indicative of absence of honesty and deception. The analysis of Physiological and Neurocognitive correlates gives us an indication pertaining to an individual's honest or dishonest behavior. However Polygraph is the most preferred technique by investigators even today.

Polygraph was always questioned especially in cases of psychopaths, however experiment by Raskin and Hare in 1978 provided promising results whereby accurate detection of deception was seen in cases of habitual liars thus providing scientific evidence to distinguish truth from lie. Various studies have been providing scientific support for the use of Polygraph and the most important study was by American Polygraph Association in the year 2011. In their executive summary, they have cited 89% accuracy when it comes to decision making. The inconclusive rate has been quoted as around 11%. Few studies have stated the detection deception reliability to be between 83% to 89% as opposed to 53% to 73% which is the ability to measure truthful responses (Raskin & Honts 2002, Brewer 2005). The detection deception accuracy was found to be between 81% to 91% by National Research council in the year 2003.

Polygraph though being criticized has been the most popular tool amongst investigators. The most important aspect of the Polygraph is that it should be as short and logical as possible. The possibility of impact due to repeated questioning cannot be ruled out and hence the examiner needs to pay special attention to maintain novelty and significance and at the same time studying motivation, habituation and fatigue of the examinee (Saldžiūnas & Kovalenka, 2015)

Most of the criticism of Polygraph is related to the questioning technique as compared to the actual process involved. Even though it is heavily criticized, it is the most favorable tool used by investigating agencies all over the world.

Legal Status of Polygraph in India: Polygraph has been most commonly used as an aid to investigation by Police agencies in most countries. In US, 23 states have been admitting Polygraph as evidence in the court but there are other states which do not admit Polygraph as an evidence. In UK, Polygraph is a mandatory procedure for sex offenders as well as Domestic Abuse perpetrators (gov.uk. 2020). In India, Polygraph Examination has been used as an aid to investigation. However, the guidelines by National Human Rights commission, 2000 which were upheld by the Supreme Court Judgment of *Selvi v/s State of Karnataka* highlighted the voluntary consent in front of the magistrate as a mandatory pre-requisite for the conduction of Polygraph. Various investigating agencies of the different states have been referring cases for Polygraph Examination in criminal cases with IPC 302, 376, etc. The results of the Polygraph cannot be directly admissible in the courts, however the information retrieved from the voluntary conduction of the Polygraph can be admitted under Section 27 of Indian Evidence Act (Puranik and Paul, 2014).

Polygraph in Criminal cases: Polygraph has been most often used in criminal cases as compared to other cases. In India, Polygraph has first used in the 1970s after which it has been regularly used in criminal investigations (Puranik, Ghumatkar, Kulkarni 2018). Some of the famous criminal cases in which Polygraph was used was Arushi Murder case, Nithari case, Telgi Scam, Malegaon Blast, etc. Polygraph Examination was recently used in the most sensitive Shradha murder case wherein the accused Aftab had undergone Polygraph Examination. Apart from that Polygraph Examination has been used in many cases such as Arushi Murder case, Suicide of Mahant Narendra Giri, etc.

Polygraph in Civil Cases: The application of Polygraph examination in civil cases is less explored. Polygraph Examination can be explored in civil cases as well. Polygraph Examination can be applied in family courts in cases of divorce. Divorce cases most of the times are surrounded by issues pertaining to alimony, allegations, blackmailing, physical and mental harassment. But in most cases no

criminal case has been filed. Each one wants to prove their point and hence they opt for voluntary conduction of Polygraph Examination in the absence of any evidence to prove their innocence.

Polygraph as a tool in cases of infidelity

Trust in a relationship is considered to be the base of a strong relationships. However, these days especially in Indian context we have seen increase in dishonesty especially in marital and dating relationships. Infidelity is one of the major reasons for breakups as well as it has been observed that these days there is a trend to normalize the infidelity. Many couples have voluntarily opted for lie-detector tests to help sort out the issues pertaining to infidelity, suspicion as they feel that the results of the tests helps them clear the air which has been the basis of conflict in their relationships. Though this is one of the most controversial issues where the question arises about application of Polygraph for clearing issues in a relationship instead of using communication as a key to resolve relationship conflicts. However, Polygraph has been used as a tool especially by couples in marriage as well as relationships in most of the countries. Many individuals have shared that Polygraph actually helped them take most significant and difficult decision to proceed for separation. At the same times, various individuals have shared that they can now peacefully stay in the relationship as the truth is finally out. Polygraph in relationships is frequently used in most of the countries where various shows such as "The Moment of Truth" or "Lie Detector" have been using Polygraph on couples.

Polygraph as a tool of Pre-employment: The criticisms for Polygraph were mainly against its use as a pre-employment. As per the Employee Polygraph Prohibition Act, the employees are not mandated to undergo Polygraph Examination except for in few services such as security firms, pharmaceutical industries, etc. At the same time, it is mandatory for Government employees in services such as military or police who has to undergo the test as a part of recruitment procedure. (dol. gov). Recently, Polygraph Examination was used for recruitment of 187 security forces at Maldives by National Forensic Science University, Gandhinagar (Rajput V. 2023). However, in India context, Polygraph for pre-employment purpose is rarely

used. However, many MNC, have their potential employees undergo Polygraph Examination especially since it is a part of policy of their parent company.

Polygraph as a tool for Corporates Investigations: Polygraph has been an important part of corporate investigations. Many cases pertaining to data theft, confidentiality breach, disclosure of private data, sabotage, etc. Though the Employee Polygraph Protection Act 1988, has given restriction for the use of Polygraph for pre-employment purpose, it has permitted the use of Polygraph on employees involved in certain acts which were against the policies of the company or suspected involvement in theft or data breach to competitive firms (dol.gov). Puranik and Krishnamurthy, (2021) highlighted the significant role of Polygraph in corporate investigations along with Psychological Interviewing. The ethical guidelines are to be followed strictly that includes the pre-test, actual examination and post test procedures.

Conclusion

Polygraph has always taken limelight since the days of its inception and though there has been criticisms or controversies surrounding it, it has always stood tall. Polygraph experts have stated that when the Polygraph examination is conducted in the most ethical and standardized manner, it gives the results which many times have been difficult to refute. However, the voluntary consent of the individual undergoing it and court order in case of accused are the core requirements of the Polygraph Examinations. The deception in polygraph had received support in form of physical evidences submitted in the honorable courts in many cases. At the same time, evidences obtained after the voluntary conduction of Polygraph can be considered under Section 27 of Indian Evidence Act. The application of Polygraph is diverse; however the expertise of Polygraph examiners is of utmost importance since we are dealing with human lives. If used appropriately and in ethical manner, the Polygraph still promises to be one of the most useful tool for investigation.

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