



Constitutionality and evidentiary value of narcoanalysis, polygraph & BEAP tests

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Abstract

This study provides in brief the method and historical perspective of Narcoanalysis, Polygraph & BEAP tests technique. The main aim of this study is to analyze the evidentiary value, legality and Constitutional validity of Narcoanalysis, Polygraph & BEAP tests in India. The study's emphasis is to search the nature and scope of Narcoanalysis, Polygraph & BEAP tests in the light of the Constitution of India and Cr.P.C. provisions. The paper also describes the judicial trend and analyzes the power of Court to order Narcoanalysis, Polygraph & BEAP tests technique in India. The essential feature of leading case Selvi v. State of Karnataka is presented in the paper with National Human Rights Commission guideline.

Keywords: narcoanalysis, polygraph, beap test, legality, constitutionality

1. Introduction

The term Narcoanalysis is derived from Greek word NARKKA meaning anesthesia or tarpor by administering psychotropic drug to the subject. Narcoanalysis test is also known as Truth Serum Test. Narco+Analysis=Narco-analysis means psycho analysis using drugs to induce a state akin to sleep. In narco analysis test the drug like sodiumamytal is used as a truth drug on the suspect for determination of facts about the crime. It is called 'Amytal Interview' [1]. It is believed that if a person is administered a drug which suppresses his reasoning power without affecting memory and speech, he can be made to tell the truth. Some drugs have been found to create this 'twilight state' in some persons. These drugs are being administered in some countries including India.

'Lie-detector' or 'Polygraph' is an instrument for detecting physiological evidence of the tension that accompanies. During the polygraph examination, several instruments are attached to the subject for measuring and recording the physiological responses. The examiner then reads these results, analyzes them and proceeds to gauge the credibility of the subject's answers. Instruments such as cardiographs, pneumographs, cardio-cuffs and sensitive electrodes are used in the course of polygraph examinations. They measure changes in aspects such as respiration, blood pressure, blood flow, pulse and galvanic skin resistance. The truthfulness or falsity on part of the subject is assessed by relying on the records of the physiological responses [2].

Polygraph is a combination of technologies. Any device which records involuntary bodily responses associated with conscious lying is called lie detector machine. If the instrument is faulty it will not record changes correctly. The polygraph test cannot take place of a thorough investigation. Before making request for polygraph test, the investigating officer must exhaust all avenues of investigation. The polygraphic test can check 'truthfulness of witnesses' statement, it can induce criminals to confess to crimes committed by them, it replaces third degree methods used during police interrogations, it can help in discriminating the innocent from the guilty and it can also be used to check honesty and integrity of employees or candidates to employment or persons subjected to the polygraph test.

Another controversial use of polygraph tests has been on victims of sexual offences for testing the veracity of their allegations. Several states in the U.S.A. have enacted provisions to prohibit such use [3].

Brain Electrical Activation Profile (BEAP) test also known as the 'P300 Waves test'. It is a process of detecting whether an individual is familiar with certain information by way of measuring activity in the brain that is triggered by exposure to selected stimuli. This test consists of examining and measuring 'event-related potentials' (ERP) i.e. electrical wave forms emitted by the brain after it has absorbed an external event. An ERP measurement is the recognition of specific patterns of electrical brain activity in a subject that are indicative of certain cognitive mental activities that occur when a person is exposed to a stimulus in the form of an image or a concept expressed in words⁴. The measurement of the cognitive brain activity allows the examiner to ascertain whether the subject recognised stimuli to which he/she was exposed.

2. Historical Perspective and Method

2.1 Narcoanalysis

The term narcoanalysis was introduced in 1936 for the use of narcotics to provoke a stupor like state where various queries are subjected to a person. Under the influence of the drug, the subject talks freely and is purportedly deprived of his self-control and will- power to manipulate his answers. The underlying theory is that a person is able to lie by using his imagination. In the narcoanalysis test, the subject's imagination is neutralized and reasoning faculty affected by making him semi-conscious. The subject is not in a position to speak up on his own but can answer specific and simple questions. In this state it becomes difficult for him to lie and his answers would be restricted to the facts he is already aware of. His answers are spontaneous as a semi-conscious person is unable to manipulate his answers.

A few of the best known drugs are Seconal, Hyoscine (scopolamine), Sodium Pentothal, Sodium Amytal, Phenobarbital. Commonly used drug for truth serum evaluation is an anesthetic and sedative drug, Sodium Pentothal which when administered intravenously which when given to a person

can make him garrulous and confessional. The narcoanalysis test is conducted by mixing 3 grams of Sodium Pentothal or Sodium Amytal dissolved in 3000 ml of distilled water. Depending on the person's sex, age, health and physical condition, this mixture is administered intravenously along with 10% of dextrose over a period of 3 hours with the help of an anesthetist⁵. Wrong dose can send the subject into coma or even result in death. The rate of administration is controlled to drive the accused slowly into a hypnotic trance. The effect of the biomolecules on the bio-activity of an individual is evident as the drug depresses the central nervous system, lowers blood pressure and slows the heart rate, putting the subject into a hypnotic trance resulting in a lack of inhibition. The subject is then interrogated by the investigating agencies in the presence of the doctors. The revelations made during this stage are recorded both in video and audio cassettes^[5]. The report prepared by the experts is used in the process of collecting evidence. This procedure is conducted in government hospitals after a court order is passed instructing the doctors or hospital authorities to conduct the test. Personal consent of the subject is also required.

2.2 Polygraph

The polygraph test was invented by Robert House of the U.S.A. in 1922^[6]. The subject is applied sedative drugs and under its influence questioning of the subject is done by the expert. The most striking feature of this test is that the subject cannot create a lie as under the influence of the drug, he'll have no reasoning power. Under the influence of such drugs the subject cannot innovate and he would be speaking only the truth.

In Medieval England, truth was tested by putting a suspect under water or throwing him in fire considering that if he is truthful God will save him. Another test was that the suspect would have to carry a red-hot iron bar for nine paces and if he was burnt he was deemed guilty and was immediately hanged. Sometimes the accused was tied with the sack of sand and thrown in the river. If he sank he was considered truthful and if he floated he was thought guilty and was then hanged. In both the cases the accused had to die. These practices of lie detection were banned by law in England in the year 1215. The earliest scientific method of detecting deceptions or lies was developed in 1895 by Cesare Lombroso, an Italian Criminologist, and in the year 1921 Dr. John A. Larson developed the earliest version of Polygraph. The test of Polygraph was for the first time judicially noticed in USA in 1923 in the case of *Frye vs. United States*⁷. Polygraph instrument is stated to record with 100% accuracy the physiological changes in breathing, perspiration, blood pressure and pulse rate to determine a truth or a lie.

2.3 Beap Test

The brain mapping test was developed by Dr. Lawrence A. Farwell in 1995. This method is also called the 'Brain Wave Finger Printing'; the accused is first interviewed and interrogated to find out whether he is concealing any information. Then sensors are attached to the subject's head and the person is seated before a computer monitor. He is then shown certain images or made to hear certain sounds. The sensors monitor electrical activity in the brain and register P300 waves, which are generated only if the subject has connection with the stimulus i.e. picture or sound. The subject

is not asked any questions. Dr. Farwell has published that a MERMER^[8] (Memory and Encoding Related Multifaceted Electro Encephalographic Response) is initiated in the accused when his brain recognized noteworthy information pertaining to the crime. These stimuli are called the "target stimuli". In nutshell, Brain finger printing test matches information stored in the brain with information from the crime scene.

3. Right against self- incrimination and the Right to fair trial

International Covenant on Civil and Political Rights (ICCPR)

Article 7

No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. In particular, no one shall be subjected without his free consent to medical or scientific experimentation.

Article 14(3)(g)

Not to be compelled to testify against himself or to confess guilt.

European Convention for the Protection of Human Rights and Fundamental Freedoms

Article 6(1)

In the determination of his civil rights and obligations or of any criminal charge against him, everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law.

Article 6(2)

Everyone charged with a criminal offence shall be presumed innocent until proved guilty according to law.

Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment, 1984.

Article 6

1. Upon being satisfied, after an examination of information available to it, that the circumstances so warrant, any State Party in whose territory a person alleged to have committed any offence referred to in article 4 is present shall take him into custody or take other legal measures to ensure his presence. The custody and other legal measures shall be as provided in the law of that State but may be continued only for such time as is necessary to enable any criminal or extradition proceedings to be instituted.
2. Such State shall immediately make a preliminary inquiry into the facts.
3. Any person in custody pursuant to paragraph 1 of this article shall be assisted in communicating immediately with the nearest appropriate representative of the State of which he is a national, or, if he is a stateless person, with the representative of the State where he usually resides.
4. When a State, pursuant to this article, has taken a person into custody, it shall immediately notify the States referred to in article 5, paragraph 1, of the fact that such person is in custody and of the circumstances which warrant his detention. The State which makes the preliminary inquiry contemplated in paragraph 2 of this article shall promptly report its findings to the said States and shall indicate whether it intends to exercise jurisdiction.

Article 16

1. Each State Party shall undertake to prevent in any territory under its jurisdiction other acts of cruel, inhuman or

degrading treatment or punishment which do not amount to torture as defined in article 1, when such acts are committed by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. In particular, the obligations contained in articles 10, 11, 12 and 13 shall apply with the substitution for references to torture of references to other forms of cruel, inhuman or degrading treatment or punishment.

2. The provisions of this Convention are without prejudice to the provisions of any other international instrument or national law which prohibits cruel, inhuman or degrading treatment or punishment or which relates to extradition or expulsion.

The Constitution of India-Protection in respect of conviction for offences

Article 20 (3)

No person accused of any offence shall be compelled to be a witness against himself

Article 21

No person shall be deprived of his life or personal liberty except according to procedure established by law.

The aforesaid provision of international convention and Constitution of India provide the normative framework of 'Right against self-incrimination' and the 'Right to fair trial'. International Covenant on Civil and Political Rights (ICCPR) Article 14(3) (g) enumerates the minimum guarantees in trial and not to be compelled to testify against himself or to confess guilt. In the European Convention for the Protection of Human Rights and Fundamental Freedoms Article 6(1) secures a right to a fair trial and Article 6(2) provides that 'Everybody shall be presumed innocent until proved guilty according to law'. Special emphasis was placed on the definitions of 'torture' as well as 'cruel, inhuman or degrading treatment or punishment' in Articles 1 and 16 of the Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment, 1984.

In the Indian context, 'right against self-incrimination' are related with the multiple dimensions of 'personal liberty' under Article 21, which includes guarantees such as the 'right to fair trial' and 'substantive due process'. It must also be emphasized that Articles 20 and 21 have a non-derogable status within Part III of our Constitution because the Constitution (Fourth-Fourth amendment) Act, 1978 mandated that the right to move any court for the enforcement of these rights cannot be suspended even during the operation of a proclamation of emergency.

4. Evidentiary value of Polygraph, Narcoanalysis and BEAP test

Examinations of Scientific tests are within ambit of explanation (a) of Section 53, 53-A, 54 of Code of Criminal Procedure (Cr.P.C.).

Explanation (a)

"examination" shall include the examination of blood, blood stains, semen, swabs in case of sexual offences, sputum and sweat, hair samples and finger nail clippings by the use of modern and scientific techniques including DNA profiling and such other tests which the registered medical practitioner thinks necessary in a particular case ^[9].

Though conducting of certain medical tests on accused is permissible under explanation (a) to Sec 53, 53-A & 54 Cr. P.

C. In explanation (a), a controversy arises due to the phrase, 'and such other tests' as to whether what those other tests can be conducted along with blood, blood stains, semen, swabs in case of sexual offences, sputum and sweat, hair samples and finger nail clippings by the use of modern and scientific techniques including DNA profiling. Can the Narcoanalysis, BEAP test and Polygraph tests be included under the 'and such other tests'? In *Selvi v. State of Karnataka* ^[10], the Apex Court explicitly cleared the doubts on the basis of testimonial acts and physical evidence regarding Narcoanalysis, BEAP test and Polygraph tests.

In this case, it was argued that amended explanation to Sections 53, 53A and 54 of the Cr. P. C. contains '*and such other tests*' which includes narcoanalysis technique, polygraph examination and the BEAP test have not been expressly enumerated, they could be read in by examining the legislative intent. The Court take the view that the results of the narcoanalysis technique, polygraph examination and the BEAP test should be treated as testimonial acts. The court recognised the distinction between testimonial acts and physical evidence. While bodily substances such as blood, semen, sputum, sweat, hair and fingernail clippings can be readily characterised as physical evidence. The same cannot be said for narcoanalysis technique, polygraph examination and the BEAP test. This argument was supported by invoking the rule of '*ejusdem generis*' which is used in the interpretation of statutes. This rule entails that the meaning of general words which follow specific words in a statutory provision should be construed in light of the commonality between those specific words. In the present case, the substances enumerated are all examples of physical evidence. Hence the words 'and such other tests' which appear in the Explanation to Sections 53, 53A and 54 of the Cr.P.C. should be construed to include the examination of physical evidence but not that of testimonial acts.

The Explanation to Sections 53, 53A and 54 of the Cr. P. C. does not enumerate certain other forms of medical examination that involve testimonial acts, such as psychiatric examination among others viz. Narcoanalysis, Polygraph & BEAP tests. This demonstrates that the amendment to this provision was informed by a rational distinction between the examination of physical substances and testimonial acts.

With the aforesaid reasoning in the *Selvi case* ^[11] Apex Court in its judgment held that Narcoanalysis, Polygraph & BEAP tests are not included in 'and such other tests'. Therefore registered medical practitioner cannot conduct or prescribe to conduct these tests involuntarily.

4.1 Evidentiary Value When Polygraph, Narcoanalysis and BEAP test Conducted Voluntarily (With Consent)

In *Selvi v. State of Karnataka* Apex Court ^[12] held that no individual should be forcibly subjected to any of the techniques in question, whether in the context of investigation in criminal cases or otherwise. Doing so would amount to an unwarranted intrusion into personal liberty. However, The Court allowed voluntary administration of the impugned techniques in the context of criminal justice, provided that certain safeguards are in place.

Even when the subject has given consent to undergo any of these tests, the test results by themselves cannot be admitted as evidence because the subject does not exercise conscious control over the responses during the administration of the test. However, any information or material that is subsequently

discovered with the help of voluntary administered test results can be admitted, in accordance with Section 27 of the Evidence Act, 1872.

The Supreme Court of India in *Ram Singh vs. Sonia* [13], while dealing with the question of admissibility and reliability of the result of the narcoanalysis test, has not given any conclusive opinion regarding the admissibility and the reliability of the report of the narcoanalysis test.

4.2 Power of Court to order Narcoanalysis, Polygraph & BEAP tests

The discovery of the truth is the essential phenomena of investigation, and all efforts have to be made to find out the real culprit, because, a guilty person should not be allowed to escape from the liability of the guilt. Allahabad¹⁴, Gujrat¹⁵ and Madras High Courts¹⁶ have, therefore, to adopt a helpful attitude, in all efforts, made by the prosecution for discovery of the truth. If the Narcoanalysis and Brain Mapping Test can be helpful in finding out the facts relating to the offence, it should be used and utilized and the Courts should not obstruct the conduct of the exercise.

Apex Court in *Selvi v. State of Karnataka* [17] considers the possibility that the victims of offences could be forcibly subjected to any of these techniques during the course of investigation. The Court opined that irrespective of the need to expedite investigations in such cases, no person who is a victim of an offence can be compelled to undergo any of the tests in question. Such a forcible administration would be an unjustified intrusion into mental privacy and could lead to further stigma for the victim.

4.3 Admissibility of the Result of Narcoanalysis, Brain Mapping tests in Civil Cases

In the case of *Sharda v. Dharampal* [18], the contention related to the validity of a civil court's direction for conducting a medical examination to ascertain the mental state of a party in a divorce proceeding. Needless to say, the mental state of a party was a relevant issue before the trial court, since insanity is a statutory ground for obtaining divorce under the Hindu Marriage Act, 1955. S.B. Sinha, J. held that Article 20(3) was anyway not applicable in a civil proceeding and that the civil court could direct the medical examination in exercise of its inherent powers under Section 151 of the Code of Civil Procedure, since there was no ordinary statutory basis for the same.

Under Section 75(e) of the Code of Civil Procedure and Order 26, Rule 10-A the civil court has the requisite power to issue a direction to hold a scientific, technical or expert investigation. But the court in *Selvi v. State of Karnataka* [19] held that no individual should be forcibly subjected to any of the techniques in question, whether in the context of investigation in criminal cases or otherwise. Doing so would amount to an unwarranted intrusion into personal liberty. But, in the *Selvi* case, the court used the word 'criminal cases or otherwise' meaning that the Civil Cases would also come under this ambit. This would mean that even those cases which are civil in nature, cannot administer the Narcoanalysis, Polygraph and BEEP tests forcefully or involuntarily.

The Law Commission observed [20] that a provision intended for the examination of the body would reveal valuable evidence. This view was taken forward in the 41st Report which recommended the inclusion of a specific provision to enable

medical examination during the course of investigation, irrespective of the subject's consent.

5. Legality of Polygraph, Narcoanalysis and BEAP test

In *Selvi v. State of Karnataka* [21], honorable Supreme Court of India taking note of *The State of Bombay vs. Kathi Kalu Oghad and Ors* [22] and the distinction drawn between testimonial and physical acts from American cases. *Selvi* case relied on majority decision in *Kathi Kalu Oghad* [23] is the controlling precedent, it will be useful to restate the two main premises for understanding the scope of "testimonial compulsion". The first is that ordinarily, it is the oral or written statements which convey the personal knowledge of a person in respect of relevant facts that amount to "personal testimony" thereby coming within the prohibition contemplated by Article 20(3). In most cases, such "personal testimony" can be readily distinguished from material evidence such as bodily substances and other physical objects. The second premise is that in some cases, oral or written statements can be relied upon but only for the purpose of identification or comparison with facts and materials that are already in the possession of the investigators. In *Selvi case*, Apex Court [24] emphasized and clarify that the bar of Article 20(3) can be invoked only when the statements are likely to lead to incrimination by themselves or "furnish a link in the chain of evidence" needed to do so. A situation where a testimonial response is used for comparison with facts already known to the investigators is inherently different from a situation where a testimonial response helps the investigators to subsequently discover fresh facts or materials that could be relevant to the ongoing investigation."

The court opined²⁵ that the compulsory administration of the Polygraph, Narcoanalysis and BEAP test technique violates the 'right against self-incrimination'. This is because the underlying rationale of the said right is to ensure the reliability as well as voluntariness of statements that are admitted as evidence. Article 20(3) when read with Section 161(2) of the Code of Criminal Procedure 1973, it protects accused persons, suspects as well as witnesses who are examined during an investigation. The test results cannot be admitted in evidence if they have been obtained through the use of compulsion. Article 20(3) protects an individual's choice between speaking and remaining silent, irrespective of whether the subsequent testimony proves to be inculpatory or exculpatory. Article 20(3) aims to prevent the forcible 'conveyance of personal knowledge that is relevant to the facts in issue'. The results obtained from each of the impugned tests bears a 'testimonial' character and they cannot be categorized as material evidence. Finally the Court held that Polygraph, Narcoanalysis and BEAP test resulted in the testimony because the person who is subjected to these tests is communicate with something which was known only to him and if it is involuntary, it amounts to testimonial compulsion. If the tests were administered involuntarily it would be violative of article 20(3) and 21 and become unconstitutional.

In *Natvarlal Amarshibhai Devani Vs. State of Gujarat and Ors* [26], the Gujarat High Court relying on *Selvi* case, opined that apart from the apparent distinction between evidence of a testimonial and physical nature some forms of testimonial acts lie outside the scope of Article 20(3). For instance, even though acts such as compulsorily obtaining specimen signatures and handwriting samples are testimonial in nature, they are not incriminating by themselves if they are used for the purpose of

identification or corroboration with facts or materials that the investigators are already acquainted with. The relevant consideration for extending the protection of Article 20(3) is whether the materials are likely to lead to incrimination by themselves or "furnish a link in the chain of evidence" which could lead to the same result. Hence, reliance on the contents of compelled testimony comes within the prohibition of Article 20(3) but its use for the purpose of identification or corroboration with facts already known to the investigators is not barred.

6. NHRC Guideline and Selvi Case

The three-Judge Bench, in *Selvi v. State of Karnataka* ^[27], finally framed a binding guideline and held that no individual should be forcibly subjected to any of the Polygraph/ Narcoanalysis / BEAP test techniques, whether in the context of investigation in criminal cases or otherwise. Doing so would amount to an unwarranted intrusion into personal liberty guaranteed under Articles 20 and 21 of the Constitution of India and under Section 161(2) of Cr.P.C.

The court left the scope for the voluntary administration of Polygraph, Narcoanalysis and BEAP test techniques in the context of criminal justice, provided that certain safeguards are in place. Even when the subject has given consent to undergo any of these tests, the test results by themselves cannot be admitted as evidence because the subject does not exercise conscious control over the responses during the administration of the test. However, any information or material that is subsequently discovered with the help of voluntary administered test results can be admitted, in accordance with Section 27 of the Evidence Act, 1872. The National Human Rights Commission (NHRC) had published '*Guidelines for the Administration of Polygraph Test (Lie Detector Test) on an Accused*' in 2000. These guidelines should be strictly adhered to and similar safeguards should be adopted for conducting the 'Narcoanalysis technique' and the 'Brain Electrical Activation Profile' test. The text of binding NHRC guidelines has been given below:

1. No Lie Detector Tests should be administered except on the basis of consent of the accused. An option should be given to the accused whether he/she wishes to avail such tests.
2. If the accused volunteers for a Lie Detector Test, he should be given access to a lawyer and the physical, emotional and legal implication of such a test should be explained to him by the police and his lawyer.
3. The consent should be recorded before a Judicial Magistrate.
4. During the hearing before the Magistrate, the person alleged to have agreed should be duly represented by a lawyer.
5. At the hearing, the person in question should also be told in clear terms that the statement that is made shall not be a 'confessional' statement to the Magistrate but will have the status of a statement made to the police.
6. The Magistrate shall consider all factors relating to the detention including the length of detention and the nature of the interrogation.
7. The actual recording of the Lie Detector Test shall be done by an independent agency (such as a hospital) and conducted in the presence of a lawyer.

8. A full medical and factual narration of the manner of the information received must be taken on record.

The Apex Court while dealing with the involuntary administration of narcoanalysis, polygraph examination and the Brain Electrical Activation Profile test techniques for the purpose of improving investigation efforts in criminal cases, opined that the compulsory administration of the impugned techniques constitute 'cruel, inhuman or degrading treatment' in the context of Article 21.

7. Conclusions

In Narcoanalysis test intravenous injection of Sodium Pentothal will be given to the subject of the test and due to which the subject of the test goes into hypnotic trance. In polygraph test, some instruments like cardiographs, pneumographs, cardio-cuffs, sensitive electrodes etc. would be attached to the subject's body before measuring physiological responses. In BEAP test, electrical waves emitted from the subject's brain would be recorded by attaching electrodes to his scalp. In *Selvi* case the legality of the three scientific tests namely (i) Narcoanalysis, (ii) Polygraph test (Lie Detector Test) and (iii) BEAP (Brain Electrical Activation Profile) Test were decided and Apex Court held that tests cannot be administered involuntarily because that would be violate the rights guaranteed to the accused under Indian Constitution. Considering the nature of the three tests, the entire technical processes involved in the conduct of the said techniques and the legal position, the Supreme Court held that test resulted in the testimony because the person who is subject to these tests communicates something which was known only to him and if it is involuntary, it amounts to testimonial compulsion and that would be unconstitutional under Articles 20 and 21 of the Constitution of India and violative under Section 161(2) of Cr.P.C.

The decision in *Selvi* Case does not enlarge but restricts the ambit of the expressions '*such other tests*' occurring in the explanation of section 53, 53-A and 54 of Cr P C. The explanation deals with material and tangible things related to the human body and the phrase "*and such other tests*" appearing in Explanation (a) to Section 53 of the Code should be read so as to confine its meaning to include only those tests which involve the examination of physical evidence. The Narcoanalysis, Polygraph test and BEAP test are not covered under ambit of phrase 'and such other tests' because their testimonial compulsive nature.

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