

Glimpse on narco analysis, polygraph and brain mapping in criminal investigation and trials

Keval Ukey

Asst. Professor (Law), Institute of Forensic Science, 15, Madam Cama Road, Mumbai, Maharashtra, India

Abstract

The basis of Indian criminal justice system is the investigation by the police. When an offence is brought to the notice of police, it is their responsibility to investigate into the matter to find out who committed the crime, to ascertain the facts and circumstances, to collect and present whole set of these to the court to find the accused guilty or not. But this seldom happens in present scenario. The reason behind this is criminals have become classy, sophisticated, hi-fi and are simply cutting-edge as they are adopting new and enhanced techniques for commission of crimes. They hardly leave any sort of evidences at the crime site or otherwise and on the contrary police and investigation agencies are stills tuck on the longstanding tools, techniques of investigation of crimes. Police often use third-degree torture to extract information. Consequently, custodial atrocities, custodial deaths are on an increase. Also, where criminals leave no evidence of their alleged crimes, they escape punishments in the absence of direct proof sufficient enough to establish the guilt. It is here that we can seek the help of scientific evidence for effective delivery of justice as it combines both science and the law. We use a number of scientific techniques like Nacro-analysis, polygraph, and Brain-mapping etc. The advantages of Narco Analysis, Polygraph and Brain-Mapping are that these techniques are helpful in saving the innocents from prosecution and eliminating the use of third degree method in criminal investigations. In addition, it has been used as a time saving techniques in trial of criminal cases by help of trained and skilled forensic experts.

Keywords: Forensic Science, Criminal Investigations, Forensic Dimensions, Forensic Evidence, Medical Jurisprudence, Third-degree Treatment, Torture, Indian Evidence Act, Relevant provisions of Indian Constitution, Criminal Procedure Code, Indian Penal Code, Narco Analysis, Polygraph and Brain Mapping, Criminal Investigation and Trials.

1. Introduction

Justice is the fundamental object of law. Speaking particularly about criminal law, it contains a set of rules for the maintenance of social order in society where change is constant. Whether one examines the legal socialization process, the judicial process or the criminal justice process and the concerns about justice pervades in all these areas.

Of all the branches of law governs every aspect of a man in a civilized society still criminal law is one that specific branch that has contact with an individual in his everyday routine. Yet the position of Indian criminal law is not satisfactory. The basis of Indian criminal justice system is the investigation by the police. When an offence is brought to the note of police, it is their responsibility to investigate into the matter to find out who committed the crime, to ascertain the facts and circumstances, to collect and present whole set of these to the court to find the accused guilty or not. It is the duty of police to apprehend the wrongdoer and present the case before the court of justice to meet the ends of justice. But this seldom happens in present scenario. The reason behind this is criminals have become classy, sophisticated, hi-fi and are simply cutting-edge as they are adopting new and enhanced techniques for commission of crimes. They hardly leave any sort of evidences at the crime site or otherwise and on the contrary police and investigation agencies are stills tuck on the longstanding tools, techniques of investigation of crimes. Police often use third-degree torture to extract information. In many cases try to suppress the truth and make out fabricated cases for many reasons as political influences or corruption to name a few. Consequently, custodial atrocities, custodial deaths are on

an increase with leaps and bounds and all this is nothing but a big blow on the 'Rule of Law'. Also, where criminals leave no evidence of their alleged crimes, they escape punishments in the absence of direct proof sufficient enough to establish the guilt. Moreover, where the victims turn hostile there is no way left for the judiciary except to give accused benefit of doubt and set him free which results in incarceration of criminals and loss of faith in criminal justice system of victim, victim's family and society at large.

It is here that we can seek the help of scientific evidence for effective delivery of justice as it combines both science and the law. We use a number of scientific techniques like DNA, asphyxia, epiphysis, Nacro-analysis, polygraph, and Brain-mapping etc. The cardinal principle in applying scientific aids to investigation is the rule of fair play, unbiased approach and openness of mind from collection, evaluation analysis and use of this scientific evidence both by investigators and forensic experts.

Forensic science plays a vital role in crime detection. The operation of forensic is nothing but application of techniques and tools of basic science for various analysis of evidence associated with crimes. The scientific examination by forensic scientists adjoins a missing link and strengthens the weak chain of investigation. Now, when criminals are shrewd enough that they hardly leave any evidence, we need to bring into picture forensic science. In *Som Prakash vs. State of Delhi*, Hon'ble Supreme Court recognized the requirement, the necessity of scientific investigation. Also the Law Commission emphasized on the need of training of Police officers in using scientific methods of investigation. Narco Analysis, Polygraph and Brain-mapping are

revolutionary tools of forensic science that can prove to be very fruitful in crime investigation and trail.

2. Narco-Analysis: Modus Operandi and its use in Criminal Investigation

Narco-analysis is a test carried out on a patient or suspect when he/she, after administering barbiturates, comes in a sleep like state, and his/her repressed feelings are released. It is also called Narco-synthesis. It is in a state which is similar to means psychoanalysis is a state which is similar to sleep and this state is achieved by use of drugs. These drugs are nicknamed 'truth drugs' or 'truth serum'.

Narco-analysis has become one of the most popular techniques of crime detection in India. It is a kind of psychotherapy which is conducted on a person by inducing by bringing that individual into semi sleep with the help of scientific drugs. Human beings have the tendency of speaking lies from the time immemorial. A person is able to lie by using his mind's eye. In this test, the subject's self consciousness is allowed to sink down by making intrusion to nervous system. In such a state an attempt is made to extract information in form of clues about the crime as under the influence of drugs it becomes extremely difficult for the subject to lie.

It is believed that if person's way of thinking can be restrained without any effect on his memory. He can speak freely without any manipulations under the influence of drugs. Some drugs have been found to create this 'twilight state' in some persons and with the use of these drugs investigating agencies try to arrive at the truth.

Narco-analysis is the form of psychotherapy and an effective aid to scientific interrogation. It is a process whereby a subject is put to sleep, on into a state of half consciousness by means of dosage of scientific drugs then interrogated while in a reverie. There are two most common drugs used to bring into play the Narco-analysis and these are Sodium *amytal*, which is also known as *amobarbital* or *amylobarbitone*, and Sodium Pentothal commonly known as thiopental or *thiopentone*, is used by psychiatrist on the subject. Its effect is that it makes the subject relaxed and he/she becomes susceptible to suggestions. The subject becomes communicative and can easily tell the truth. It is said that after its use the subject loses inhibitions but does not lose his/her self-control and he/she does not want to disclose anything he/she may do so. This statement is not correct. The person actually loses self-control.

In the late 19th century either, chloroform or hashish were used to induce person and to deepen the hypnotic effect. In early 20th century, barbiturates were administered for psychotherapeutic treatments. These experiments showed that most of the patients showed uninhibited flow of speech and expressed repressed thoughts and feelings. Intimate and private thoughts were revealed under its influence. In narcoanalysis barbiturate induced state of excitation is created and patient recalls forgotten and repressed conflicts, event and experiences.

The procedure adopted is the patient is kept lying on bed in almost dark and is attended by a trained nurse who talks with the patient and dosages of drug are injected. The patient is reminded that he/she is under physician's control and should surrender to the vision and images which appear before him/her without any reservation. His/her remarks during these processes is either tape-recorded or written and then handed over to patient so that he/she may prepare a

retrospective record. After that a drug free session or interviews takes place. In this procedure drug affected experience has a supporting role. These sessions continue for several month and even up to an year. Psycholysis rotation under drug influence is considered best for patients who were reluctant to use and kind of therapy.

The dosage of drug varies depending on the suspect's sex age, health and physical and mental condition. Normally, 3 grams of any truth serum is dissolved in 3000 ml of distilled water and then it is injected to the subject intravenously. By this subject's imagination is neutralized and he is not in apposition to manipulate things but can only answer specific simple questions.

It is established that 20% of the total individuals subjected for Narco-analysis are found to be innocent. Therefore, this technique not only helps to identify the real perpetrators of crime, motive and modus operandi, conspiracies, disfigurement and displacement of evidentiary items etc. but also to identify the innocents within a short period of time.

Narco analysis may be used for medical purposes. Narco analysis has been used in mental health cases for diagnosing habilitment. In medical field Narco analysis is used for restoring speech to mute persons, in case of amnesia, for reviving memory, and for expression of suppressed or repressed thought or conflict.

Narco analysis is now being used in forensic field of criminal investigation. In India Narco analysis is useful for investigation and for prevention of crimes and also for interrogation of suspect. In criminal justice system it is used for investigation purposes. Narco analysis test should be used only in the cases where large interest of society is involved. Narco analysis is usually used in cases of terrorism, crime that are well organized, serial killings, in cases where no evidence is available etc. There are two categories of suspects who undergo Narco analysis test, where suspect willingly volunteers and co-operates with the interrogator and where suspect is forced to change the test under court orders.

3. Polygraph: Origin and Modus Operandi

Polygraph is another important scientific tool of investigation. Polygraph is popularly known as lie detector and sometimes referred to as psycho-physiological detection. It is an instrument which measures and records physiological actions of human body as for instance blood pressure of the subject, his pulse rate, respiratory system, skin conductivity while the subject is asked questions relating to the crime and he answers them. The polygraph tests measures all the natural changes caused by autonomic nervous system during questioning. The autonomic nervous system changes are beyond reasonable control of an individual and hence autonomic nervous system response change transpires when the subject tries to tell a lie.

Polygraph is a device that records simultaneously tracing of several different pulsations, as arterial and venous pulse waves, and the apex beat of heart. According to Science and Technology encyclopedia, "Lie Detector" is a device intended to detect an involuntary physiological response that all persons exhibit when lying but never when telling the truth.

The polygraph is an instrument that records certain physiologic changes in a person's body going through the questions in efforts to get hold of the truth of deception. A definition of polygraph has not been found in any Indian

Legislation. A definition of polygraph was given in the United States Employee Polygraph Protection Act, 1988. Under this Act, *polygraph means an instrument that records continuously visually, permanently and simultaneously as minimum instrumentation standard, and is used or the results of which are used for the purpose of rendering diagnostic opinion regarding the honesty or dishonesty of an individual.* According to Science and Technology Encyclopedia, "Lie Detector" is device intended to detect on involuntary physiological response that all response exhibit when lying but never when telling the truth.

It was held by the court in *Ramchandra Reddy Vs. State of Maharashtra*, Cr. W.P. (c) No. 1924 of 2003, "in this test the polygraph is taken which gives this reaction and an expert would then explain these reactions in the court which would be his reading of the polygraph form which would blow his conclusion which are to be admitted or not admitted by the judge on appreciation of the statement and the objections raised thereto"

The principle behind the polygraph technique is that the suspect fears detection of lie and creates in the subject an emotion of fear which consequently results physiological changes which are captured by various instruments. Polygraph test is basically based on the theory that generally a person telling a lie becomes nervous and shaky. Due to this position physiological changes occur in the person's body.

In polygraph test subject is asked a series of questions. These questions are controlled questions. Some questions are asked generally even though the answers to them are already known. For instance name and address of the subject. While answering these questions no change transpires. After this, relevant questions are asked and if the subject tries to lie physiological changes takes place. Physiological changes may crop up in shape of increased or decreased blood pressure, change in pulse rate or heartbeats, sweating, dryness of mouth, etc. these changes are far away from the reasonable and practical control of subject thus whenever subject tries to lie polygraph machine apprehends the lie.

In India, since 1974 more than 3000 polygraph test have been conducted. Lawyers in general are not aware of this test. It was a television serial '*Sachka Samana*' that brought polygraph test in glare of public. Indian courts never objected to polygraph test until in May 2010 when Hon'ble Supreme Court in case of *Smt. Selvi vs. State of Karnataka* objected to these scientific investigation tools. Before this judgment, some lower Courts and High Courts have passed order in favour of scientific tools. Thus polygraph test is a technique where normal bodily changes of subject are recorded and observed while subject is answering the question. These changes occur only if the subject tries to hide the truth.

The first stage is pre-test interview where the examiner introduces himself to the subject and tells that the subject about the procedure and legal aspects of the test and the consent etc. Then the examiners inform about the polygraph technique to the subject and the queries are made from the subject in detail about the incident for which the test is conducted. Questions are asked to know "behavioral symptoms" which indicates symptoms of deception.

The second state is the actual test, i.e., examination proper. Different gadgets are attached to the body of the subject for measuring the changes in physiological conditions. A rubber

tube is fastened around the chest for measuring the respiratory changes, in the upper arm an inflated cuff is wrapped for measuring the change in the blood pressure and pulse rate, and for recording the electrodermal responses electrodes are attached to the finger tips. The subject is given a comfortable chair to sit in and the test is conducted in a vacant and calm room with only the examiner. Questions prepared in advance are put to the subject and he has to reply them in 'yes' or 'no'. There is a gap of 10 to 15 seconds between each question so that responses to last question may be eliminated and physiological response comes closer to baseline. Some questions are irrelevant and some are relevant one of the questions is stores provoking question. Main questions are repeated three or four times and to avoid discomfort to subject pressure cuff are inflated only for 10 to 12 minutes. The measurement of blood pressure, perspiration, pulse and rate of breathing is recorded during whole of the question answer series. The examiner then compares responses of stress provoked question with other question and interprets the court to know whether lie has been spoken. The instrument records changes by means of a needle on the graph paper.

In the third stage the result of the test is discussed with the subject in order to analyze about deception of attempted unresponsive to any question. The result of the test is obtained on a chart known as polygram. The changes like suppression in respiration and increase of blood pressure after the reply, decrease in blood pressure, behavior breathing, slowing of pulse rate and the course of blood pressure etc are noted carefully. Polygraph does not directly detect whether the person is speaking truth or is deceiving but the examiner carefully analyzes the pattern of arousal responses and on that basis veracity of the individual is inferred. This inference or assessment is called 'diagnosis' of truthfulness or deception.

Guidelines under *Smt. Selvi vs. State of Karnataka*, a full bench of Hon'ble Supreme Court of passed an order dated 5th May 2010 regarding using force and consent for polygraph test. In this case Court held that "no individual would be subjected to any of the techniques in question, whether in context of investigation in criminal case or otherwise. Doing so would amount to an unwarranted intrusion into personal liberty. However, we do leave room for the 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 test, the result 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 Indian Evidence Act, 1872."

4. Brain Mapping: Origin and Modus Operandi

Brain Mapping is one more valuable scientific tool for investigation of crimes. Brain Mapping is also known as Late Positive Complex or P3 or P300 etc. It is a component of averaged brain potentials. In this test no questions are asked from the accused. He is made to sit in evoked potential recording machine and is shown objects relating to crime scene or is made to hear sounds pertaining to crime site. The sensors from his head pick the event related

potentials in the form of Brain Mapping only if the person has been at the site of crime the accuracy of Brain Mapping is almost 100%. Brain Mapping is a response of the brain to a stimulus which is shown to the subject.

In 1965, scientists were working on the research of Event Related Potentials and it was discovered by Sutton and his colleagues. It is very robust Event Related Potential. As soon as it recognizes the stimuli it sends the reaction within 300 milliseconds of seeing the stimuli. If the person is attentive to the stimuli its responses would be the fastest. If more time is taken for making decisions the more time is spent for the responses of P300. Its latency shows the amount taken by it in arriving at a decision.

When the brain recognizes a person or a sound, it produces a precise electronic wave which is called P300. In this test sensors are attached to the head of the subject and the subject is seated before a computerized monitor. The sensors catch the electrical activity in the brain and record P300 wave, which is produced only if the subject has some correlation with the pictures shown to him and the sounds which he is made to hear.

When any information is given to an individual, which corresponds to prior knowledge or information in his brain about the activity or event it will emit responses in the shape of p-300 waves. It has also been possible to observe stimulus response up to 100 milli seconds. P-300 is an electrically positive component and has a peak latency of about 300 to 800 milli seconds at the midline parietal area of the head. Dr. Farewell has been able to test not only the p-300 but also a negative electrical component which is found at midline frontal area and has an average latency of 800 to 1200 milli seconds through MERMER (Memory and Encoding Related Multifaceted Electroencephalographic Response). The familiarity reaction of brain towards the activity or events is the midline parietal area of the head. The familiarity reaction towards the activity or events is recorded in MERMER apparatus. For measuring EEG (Electro Encephalograph) from several place of scalp a special head band equipped with electronic sensor, is attached to the scalp and the test is presented with a series of relevant words, pictures, signs, Sounds etc. and responses of the two different types of stimuli is measurable to know whether the relevant material is known to the brain or not. If the brain is confronted with the stimuli, which is already in its store it will emit p-300 at the rate of 300 milli seconds. Since, those responses are recorded EEG signals no question has to be answered by the test. The apparatus works not on emotions but on Cognitive Brain responses. This is a major difference between a polygraph and brain fingerprinting.

Brain fingerprinting device was invented by a U.S. Scientist Dr. Lawrence Farewell in early 1970's. According to him, center of every activity is brain and it not only plans activities but orders for its extension. The "Truth Detector" is based on the functions of brain. Every event is stored in the brain and when the same or similar event is shown to person the brain responses and response is recorded through computer.

Through brain fingerprinting it can only be shown that the person was present or not at the place of occurrence. Only proof of his presence, inferences cannot draw that he has committed the alleged offence. The person may be present on the place of occurrence for some legitimate reason, e.g. for saving the victim, he may reach at that place as stranger. The information relating to the crime may come into his

mind by receiving information through reading of newspaper or watching of T.V. etc. According to Mr. A. A. Samdani, Ex Judge and Mr. Sharique Rizvi, Associate Professor, Indian Institute of Information and Technology, "information present" does not always mean that suspect is guilty. It is possible that the subject has been a witness to the crime or he or she has already read details in newspaper or seen in media which has been imprinted in his or her mind.

The test has its own limitations. The test is conducted by a human being and it is possible that they fail to fully and truthfully analyze the brain wave. An innocent person, who has not committed the crime but has only witnesses of would also react to the stimuli. Similarly, a person may be aware of the crime due to details published in media and the brain may store it. IN that case also there chance is that the innocent can also be found guilty. Therefore, this test utility is only to imprint the subject's brain, which makes it clear that the subject is innocent. This technique is also criticized on the ground that it is violation of brain privacy. By this a person loses his right to keep his thought to himself. This is also not useful in case of a person who loses his memory, e.g., old people easily lose memory and therefore can brain mapping on an old man accurately work. Similarly, a person suffering from deficiency in memory can exit normal p-300 brain waves. The six members committee headed by National Institute of Mental Health and Neuro Sciences (NIMHANS) Director Dr. Nagraj concluded that brain mapping is unscientific and should not be used as tool of investigation and evidence adduced through brain mapping should be made inadmissible in courts. He also said there is requirement of a methodical, systematic and meticulous examination of the procedure as it lacks ascertained principles.

5. Admissibility of Scientific Evidences under Indian Constitution

The Constitution of India is a product of the intense research and consideration of a body of distinguished spokespersons of the people who wanted to make better the existing system of administration. The framers of Indian Constitution while framing the Constitution, they also kept in mind geographical necessities, historical precedents and our cultural and social diversities. It, therefore, would be in the fitness of things to study and interpret every provision of the Constitution keeping in mind the needs of India. Article 20 (3) and 21 of Indian Constitution related with our topic here. Right against self-incrimination enumerated in Article 20(3) of the Constitution, which states that no person accused of an offence shall be compelled to be a witness against himself/herself. And Article 21, Right to life and personal liberty, has been judicially expanded to include a right against cruel, inhuman or degrading treatment

5.1 Article 20 (3) Self-Incrimination

Under the Indian Constitution provisions relating to self-incrimination are discussed under Article 20(3). It provides "No person accused of any offence shall be compelled to be a witness against himself". This clause is based on the legal maxim *nemo tenetur prodere accusare seipsum*, which means that no man is bound to accuse himself. Under the Indian Constitution, making of any statement that has possibility of exposing the accused to criminal prosecution, either at present or in future, is not permitted. This provision

is inspired from the 5th Amendment of the United States Constitution that prohibits the government from forcing any person to produce any sort of evidence that would incriminate that person. This immunity is available to every person against whom formal accusation has been framed.

The scope of this immunity has, prima facie, been widened by our Supreme Court by interpreting the word 'witness' to comprise both oral and documentary evidence which is likely to support a prosecution against him. Such evidence however should be in the nature of communication. Also, this protection is available against testimonial compulsion. This protection cannot be claimed by a person if at the time of making the statement he was not an accused. Moreover, it is immaterial that he becomes accused thereafter. Article 20 (3) is not applicable in cases where any sort of recovery is made, be that an object or evidence, from the possession of a person. General statements given by any person at some regular inquiry or investigation without formal charges being framed against accused would not attract Article 20 (3) even if that statement turns out to be incriminatory at some later stage.

In *Dinesh Dalmia v. State of Maharashtra*, the Bombay High Court ruled that "Narco-analysis testimony was not by compulsion because the accused may be taken to the laboratory for such tests against his will, but the revelation during such tests is quite voluntary". The Indian Courts seem to be trying to keep limited the scope of Article 20(3) on the basis of "Minimal Bodily Harm Doctrine". This approach is reflected in the Bombay High Court verdict in *Ramchandra Reddy and Ors. v. State of Maharashtra* which upheld the legality of the use of P300 or Brain fingerprinting, lie-detector test and the use of truth serum or Narco analysis. Another thought provoking decision is rather that of *Rojo Gorge v. State of Kerala*, in which the petitioner was willing to undergo both Brain mapping and Polygraph test, and but he did not want to subject himself to Narco-analysis, alleging it to be an unscientific test. However, J. Padmanabhan Nair relaying on Kathi Kallu's case rationale refused to grant the petition.

Furthermore, Medical Examination of the accused is not barred under Article 20 (3) even drawing of blood samples, pubic hair etc. in the offence of rape, where prosecution has to establish the guilt of accused beyond reasonable doubt is not held to be violative of Article 20 (3) because right to fair investigation is a fundamental right, that no victim should be derived to especially in a criminal case. It is humbly submitted that scientific evidence in such a scenario would provide a great help to investigation authorities in exhuming the truth from accused and establishing the guilt beyond reasonable doubt.

J. Ranjana Prakash Desai observed in the case of *Ritesh Sinha v. State of Uttar Pradesh* that "Taking of voice sample of accused is not violative of Article 20 (3), though there is no specific statutory provision, but interpretation of provisions of Prisoner's Act and Section 53 of Code of Criminal Procedure, showed that Magistrate has an ancillary or implied power to pass an order permitting taking of voice sample to aid the police in investigation"

Similarly, Punjab and Haryana High Court held that subjecting an accused to DNA test does not violate Article 20(3). It is out of question that any infringement of right against testimonial compulsion occurs if the court requires a person male or female to submit to DNA, the courts can do so validly. The question arises that when courts can compel

an accused for DNA tests; to give specimen signatures, hand, palm, foot impressions, there should be no hesitation in subjecting accused to Narco-analysis, polygraph and brain mapping tests as these techniques would help in efficient investigations and inquiries by authorities.

It is respectfully submitted that underlying idea in Article 20 clause 3 is compelling accused to give a statement. This should not be viewed as compelling an accused to undergo a test. Even if an accused is compelled to undergo a test, it would not come under the ambit of self-incrimination because result or outcome of a test can't be predicted beforehand; therefore, these tests should not be taken as violative of Article 20(3) but should be welcomed wholeheartedly as techniques of efficient investigation.

5.2 Article 21: Right to Life and Personal Liberty

Article 21 is considered as the heart of the Constitution. According to this, "No person shall be deprived of his life and personal liberty except according to the procedure established by law". The word 'person' in Article 21 is wide enough that it covers the citizens of the country as well as the foreigners who come to visit India. The object of Article 21 is to preserve and protect certain basic human rights against interference by the state. The framers of the Constitution followed the American model is adopting and incorporating fundamental rights.

Two rights are secured by Article 21, Right to Life and Right to Personal Liberty. Both are most prized possessions of an individual. It was rightly observed by the Hon'ble Supreme Court in *Siddharam Satlingappa Mhetre v. State of Maharashtra*, that "the inner wage for freedom is a natural phenomenon of every individual. Respect for life, liberty is not merely a norm of policy but an essential requirement of any civilized state" The Apex Court defined the term "personal liberty" immediately after the Constitution came into force in India in the case of *A.K. Gopalan v. State of Madras* as "an antithesis of physical restraint or coercion". Later, in the year 1963, Supreme Court, speaking through Justice Subba Rao, "defined personal liberty as a right of an individual to be free from restrictions or encroachment on his person whether these are directly imposed or indirectly brought about by calculated measures". Thus, protection against arbitrary privation of 'life' no longer means mere protection of death or physical injury, but also an invasion of the right to live with human dignity and would include all these aspects of life which would go to make a man's life meaningful and worth living. Article 21 is repository of all human rights essential for a person. Life means something more than mere animal existence, it includes right to food clothing, shelter, decent environment and also the right to live in a clear city, right to privacy etc.

This golden expansion of right to life and personal liberty has left right to privacy in a state of perplexity. This is often misused by persons. Accused person frequently plead that their right to privacy has been infringed. In *Malak Singh v. State of Punjab* petitioner's name was include in the surveillance register by the police and he considered this as violation of Article 21. In *Selvi v. State of Karnataka* Supreme Court expressed that Narco-analysis, Brain-mapping and Lie Detector tests cannot be conducted on accused without accused's consent, else it would violate Article 21. The fundamental rights are equally available to everyone, whether that be accused or victim. Forcing the an individual to undergo any of the impugned techniques

violate the standard of substantive due process which is required for restraining personal liberty under Article 21. In *D.K. Basu v. State of West Bengal* in the year 1997 Supreme Court expressed that there is a need to develop scientific techniques and methods for investigation and interrogation of accused as custodial deaths and torture is nothing else but a blow at rule of law. Narco-analysis, Brain-mapping and polygraph test is nothing but an efficient and scientific method of investigation. In India, where right to life is a fundamental right, a sad picture of custodial crimes is also present. Custodial Rapes, Deaths, torture all violate right to life which includes right to live with human dignity. There are thousands of cases of custodial torture, where accused implicated large number of injuries for the purpose of extorting information regarding theft and eventually accused die. Newspapers are full of such unfortunate incidents. Custodial crime is violation of fundamental rights subjecting an accused to undergo a scientific test is much better option than to letting him face third degree torture. These tests are viewed as violative of Articles 20(3) and 21 rather they should be taken as supportive of fundamental rights. Right to speedy and fair trial is also a fundamental right available to both accused and victim. In fact, if trial is not quick it cannot be regarded as reasonable, just or fair and it would fall foul of article 21 and these scientific techniques help in speedy and fair trial. The concept of fair trial and fair investigation is not only to be considered from the point of view of liberty or right of accused only, the victim and the society also suffers where investigation becomes a casualty.

6. Conclusion

Narco analysis has been criticized on number of grounds. This test is not 100% accurate. There is a data to prove that Narco analysis has 96% to 97% total screens rate. It has been criticized as an unscientific and third degree method of investigation. In some cases, Narco analysis by false tricks certain subjects made totally false statements. If the subject has been a drug addict or alcoholic his or her tolerance level will be high and he or she may false state of semi-consciousness and can tell lies. It is very difficult to suggest exact dosage of drug for a particular individual as it will vary from person to person depending upon the mental attitude and physical structure of subject. It is said that if a wrong dose is administered to the subject, it may cause his/her death.

The Polygraph test does not tell as to whether the subject is lying or not. Results only show about the physiological changes which have to be interpreted by the expert. In asking the question no science is involved and it wholly depends upon trickery and on the expertise of the examiner. A person who can control his emotions to a great extent can still tell a lie, e.g., if a person has control on himself by practice of yoga or otherwise, this test is bound to fail. Nervousness may be exhibited by many innocent and truthful persons under the conditions of police interrogations. This nervousness may arise due to various reasons, e.g., fear of being involved in the crime, or the fear that his or her previous conduct may be shown to the police what is not related to the present crime. It may also be due to the fact of not properly understanding the procedure of polygraph, besides there may be fear of wrong interpretation of chart by the examiner and even the interrogator and examiner may be biased. If the examiner holds the subject

guilty, he may interpret that char with that bent of mind and vice versa he may be lenient in interpreting, chart of a person whom he considers innocent.

Brain has been the center of attraction of neuro-scientist for decades. The brain is centrally involved in every human action and records everything that human beings do, including criminal acts. Due to this reason the brain has been the key point in inventing all equipments of lie detection be it polygraph or lie detection test, P300 or Brain fingerprinting and Narco analysis. In these test Brain fingerprinting is the latest scientific technique for measuring neural responses exhibited after an object is shown to the subject or on external stimulus is printed to the subject.

Even the compulsory administration of the impugned techniques 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. However there is scope for voluntary administration of the impugned techniques in the context of criminal justice with the application of certain safeguards. Although the test results themselves cannot be admitted as evidence, but any information or material fact that is recovered with the help of test results can be admitted in accordance with section 27 of the Evidence Act, 1872.

Under Section 330 and 331 of IPC the provisions relating to custodial torture is punishable offence. But the ground reality is different, custodial tortures and even custodial deaths are increasing day by day. The provisions of the law preventing the custodial torture are not used and also the age old method of torture for extracting confession is used, while there are several scientific methods are developed in this era. According to the latest data from the National Human Rights Commission (NHRC), at least 17,146 people were reported to have died in judicial and police custody, nearly five a day, on average in cases registered in the decade to March 2020. This year alone, in the seven months to July 2020, the NHRC reported 914 deaths in custody, 53 of these in police custody. Narco Analysis, Polygraph and Brain mapping tests can be successfully used to fight custodial deaths in India. The investigating agencies are carrying out these tests in a number of high profile cases. Rapidly and swiftly these scientific tools of investigation can become an alternate of third degree physical torture in police custody. As was rightly held by the Supreme Court in *D.K. Basu vs. State of West Bengal*, that there is need for developing scientific methods of investigation and interrogation of accused as custodial deaths and torture is nothing but a blow at rule of law.

Whatever may be the criticism but the advantages of Narco Analysis, Polygraph and Brain-Mapping are that these techniques are helpful in saving the innocents from prosecution and eliminating the use of third degree method in criminal investigations. In addition, it has been used as a time saving techniques in trial of criminal cases by help of trained and skilled forensic experts.

7. References

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