# AI-BASED LIE DETECTION AND THE RIGHT AGAINST SELF-INCRIMINATION: RECONSIDERING ARTICLE 20(3) IN LIGHT OF EMERGING NEUROTECHNOLOGIES

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## ABSTRACT

*The increasing development of artificial intelligence (AI) and neurotechnologies has created new possibilities for investigation in crimes, including facial expressions, neurological activities, automated analysis of speech and the detection of deception. Conventional investigative techniques have already raised concerns in India, including narco-analysis, polygraph examinations and brain electrical activation profile (BEAP). The emerging AI techniques because they can easily process and infer information that would include an individual's mental or cognitive state without relying completely on verbal testimony. This constitutional validity was examined by the Supreme Court of India in Selvi v. State of Karnataka, where the court held that the compulsory administration of polygraphs, BEAP tests and narco-tests could violate the protection against self-incrimination under Article 20(3) and also implicate the right to personal liberty and privacy under Article 21. This paper examines whether the principles of the Constitution in Selvi remain adequate when it is applied to AI-based lie detection tests and emerging neurotechnological methods. It further analyses the difference between testimonial evidence and physical evidence, the concept behind personal knowledge, the meaning behind compulsion and the relationship established between Article 21 and Article 20(3). This paper claims that constitutional protection should be based on the type of information extracted rather than based on the technological mechanism used in obtaining it. Where an AI or neurotechnological system is employed to extract information concerning an accused person's personal knowledge or state of mind in criminal investigation, it raises serious concerns under Article 20(3). The paper concludes by saying that safeguards*

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*are based on consent and judicial oversight. It includes transparency, protection of mental autonomy and reliability.*

**Keywords:** Lie Detection, Neurotechnology, Self-Incrimination, Privacy, Testimonial Compulsion.

## INTRODUCTION

The investigation of crime has always been historically depended on physical evidence, questioning and observation of humans. Artificial Intelligence can analyse large quantities of physical and behavioural data and may further identify patterns that may become difficult for human investigators to detect. At the same time, neurotechnology is developing technologies that are sufficient for interpreting aspects of brain activity. The convergence of AI and neurology means that increasingly sophisticated systems are designed to check whether the individual is being deceptive or to identify information which is linked with particular cognitive responses.

The significance of these developments extends beyond the question of technological accuracy. The crime investigation operates within the limits and boundaries of the constitution. The state may have a legitimate interest in discovering crime; investigative efficiency cannot automatically override fundamental rights. This tension becomes more important when the technology is used to obtain information from the person who is accused, whereas otherwise the other person would have a choice to withhold.

Article 20(3) of the constitution includes that constitution of India says that "no person accused of any offence shall be compelled to be a witness against himself". This provision includes the constitutional protection for self-incrimination and refers to a broader perspective that the state cannot force an accused for the contribution in testimonial evidence against himself.

The Supreme Court's decision in Selvi v. State of Karnataka forms a center under this protection. The court has examined the validity of constitutional safeguards in polygraphy examinations, BEAP tests and narco-analysis. It held that these administrations violated Article 20(3), which resulted in a coerced testimonial character and involved the extraction of personal knowledge from the subject itself.

The central question of this paper is whether AI-based lie detection and emerging neurotechnological investigative techniques can be reconciled with Article 20(3); it becomes particular when they seek to extract information from the accused's mental state and personal knowledge.

## RESEARCH METHODOLOGY

This research adopts a doctrinal and qualitative methodology. It primarily examines the scientific investigation, scholarly legal research, judicial decisions, privacy and the constitutional provisions.

The primary sources include the Indian Constitution, the Bharatiya Sakshya Adhiniyam 2023, judgments from the Supreme Court of India, especially in State of Bombay v. Kathi Kalu Oghad, Selvi v. state of Karnataka, Selvi v. state of Karnataka, Ritesh Sinha v. State of Uttar Pradesh and Justice K.S Puttaswamy (Retd.) v. Union of India. The study is considered with interdisciplinary literature and international literature concerned with AI-based detection and neurotechnology.

This research forms an analytical base rather than an empirical base. It is not based on attempting to attempt and determine the scientific accuracy of a particular AI lie-detection system. Instead, it also examines the constitutional consequences to know more about criminal investigations.

## ARTICLE 20(3) AND THE CONSTITUTIONAL PROTECTION AGAINST SELF-INCRIMINATION

Article 20(3) has established three essential requirements for the protection of the Constitution: there must be a person accused of any offence; there must be compulsion; and the person must be compelled to be a witness against himself in it.

This shows that the protection is not only for preventing formal confessions in court. Indian Constitutional Jurisprudence has helped in developing the broader understanding of testimonial compulsion.

In State of Bombay v. Kathi Kalu Oghad, the Supreme Court has differentiated between marital or physical evidence and testimonial evidence as well. The protection is primarily based on the communication of personal knowledge by the accused rather than merely focusing on physical

characteristics, including fingerprints and handwritten samples. The distinction becomes more important in that Article 20(3) does not provide the accused with immunity from every investigation.

The court has further adopted a broader understanding of the case in Nandini Satpathy v. P.L. Dani. The protection against self-incrimination also extends beyond the courtroom and is applied during the investigation, where the accused is exposed to questions that can lead to self-incriminating answers.

The Supreme Court's reasoning in the case of **Selvi** becomes more significant because constitutional protection must also respond to the substance of the investigative technique rather than relying on external form. The court has observed that Article 20(3) has aimed to prevent forcible conveyance of knowledge that is associated with facts in issue.

This approach becomes increasingly relevant in the growing field of AI technologies. If investigative technology records any external physical characteristics, there may be a chance that it may fall outside the core protection of testimony. Moreover, if technology is used in obtaining information which is concerning for an individual's knowledge, cognitive responses and intentions, the constitutional analysis becomes different.

## SELVI V. STATE OF KARNATAKA: THE CONSTITUTIONAL FOUNDATION

The decision in Selvi v. State of Karnataka is the most important Indian authority concerning scientific techniques designed to obtain information from the accused without ordinary questioning.

The case concerned three techniques: it includes Brain Electrical Profile (BEAP) tests, polygraph examination and narco-analysis. The petitioner has questioned the compulsory use of these techniques, violating articles 20(3) and 21.

The Supreme Court has held that involuntary administration has led to the violation of the right against self-incrimination. It has rejected the arguments by stating that the results can automatically be characterised as evidence which is physical in nature because the subject's participation was verbally limited as well as absent.

With respect to BEAP and polygraph test methods, that the courts have recognized the results were based on two types of responses, that is, neurological responses and physiological

responses. Also, it concludes that the results have possessed testimonial character because they were capable of conveying personal knowledge by relating it to facts which are relevant to the investigation.

The court hence adopted an important principle that is: the absence of conventional speech does not necessarily remove an investigative technique from the protection of Article 20(3).

The decision has also emphasised this consent. The court has held that administration is involuntary, and the techniques are unconstitutional, while permitting their voluntary administration, which is appropriate to safeguards, also where the subject matter, the results do not evidence guilt, as the scientific technique was employed.

The significance of Selvi for future technology is always considered. The judgment describes the analysis of the constitution, and it cannot be solely based on whether the individual particularly speaks in an investigation procedure or not. Instead, to do so, the court must examine the type of information that has to be extracted and whether the technology results in the extraction of personal knowledge from an individual.

## FROM POLYGRAPHS TO AI-BASED LIE DETECTION

Traditional polygraph tests attempt to identify deception through changes in pulse, skin conductivity and respiration. The underlying difficulty lies behind are not in the physical changes which establishes if a person is lying or not, but in the stress, confusion and fear that might produce circumstances of interrogation that may lead to the production of similar responses.

AI-based systems have been used to produce computational analysis in deception detection. With the dependence on these systems, there is a chance that AI would analyse physiological signals or other forms of behaviour, including facial movements and speech patterns. More advanced systems may combine multiple forms of data, and it produces a probabilistic assessment of whether a state is deceptive in nature.

This development leads to two distinct legal concerns. First, reliability becomes a constitutional issue where an algorithmic conclusion may influence the process and investigation. An AI system mostly doesn't know whether the individual is lying or not. It generates influence which is based on patterns, and prediction of deception is not equal to proof of deception.

Second, the nature of the information that has been analysed becomes important. If an AI analyses a recording which is obtained independently, the constitutional question may differ because an individual is compelled to undergo a process where the accused reveals information that the person has chosen not to disclose.

The distinction mirrors the reasoning laid down in Kathi Kalu Oghad and Selvi. The constitutional issue is not merely whether technology has touched the accused's body or whether technology has been used to obtain information for testimonial purposes.

## NEUROTECHNOLOGY AND ARTICLE 20(3)

Emerging neurotechnologies create a complex constitutional concern because they may allow information regarding mental state to be measured and interpreted. When it is combined with artificial intelligence, it may potentially infer whether an individual has possessed knowledge relating to the offence or not.

The principles in Selvi v. State of Karnataka remain relevant because the court has focused on whether these investigative techniques lead to the extraction of personal knowledge rather than relying on whether the accused speaks. Therefore, technological advancement should operate indirectly when it cannot be constitutionally compelled directly.

## ARTICLE 21, PRIVACY AND RELIABILITY

Article 21 provides an additional constitutional safeguard. In **J**ustice K.S. Puttaswamy (Retd.) v. Union of India, the Supreme Court has recognised privacy as one of the most important fundamental rights, which is closely connected with individual autonomy and dignity.

AI-based lie detection and neurology may raise concerns regarding mental privacy and bodily autonomy. The concerns become more serious when the technology is used without sufficient safeguards and consent.

Reliability becomes another major concern. AI systems would produce conclusions that are based on general patterns, and they may also produce false positives. There are factors like stress, language, fear and cultural differences which may affect behavioural responses.

The Bharatiya Sakshya Adhiniyam, 2023 would recognize the record that are digital and electronic, but the admissibility of digital information would not establish the truth of an AI-generated inference.

## LEGAL GAPS AND SAFEGUARDS

India does not presently have a comprehensive framework specifically regulating AI-based lie detection as well as neurotechnological interrogation. The principles established would provide a constitutional foundation, including further necessary safeguards.

First, these techniques would require informed and free consent. Second, these neurotechnological examinations should be subject to prior judicial oversight. Third, the reliability of the technology would require independent validation of the technology. The fourth deals with the rights of the accused, where an accused has the right to challenge methodology, accuracy and the way AI is interpreted and what the results are. At the last, algorithmic conclusions should not have never establish guilt. These safeguards would ensure these innovations do not undermine the fundamental principles of constitutional protections.

## CONCLUSION

AI and neurotechnology may significantly transform criminal investigation, but these advancements in technology cannot diminish constitutional rights. Article 20(3) protects the accused from being compelled to self-incriminate, while Article 21 helps in the protection of dignity, autonomy and privacy.

The reasoning in Selvi v. State of Karnataka demonstrates that constitutional protection should be based on the nature of information rather than the methods used to obtain it. If AI were used in obtaining an accused person's knowledge concerning the accused person's knowledge and mental state, it would lead to serious concerns raised in Article 20(3).

Indian law should adopt a technology neutral based approach where it should not be based on the constitutional safeguards are bypassed. The challenge is not to prevent technological progress but to ensure that such subjects remain subject to and linked to constitutional values.

Ultimately, it shows that there are chances where machines may change, but the constitutional protection against self-incrimination should not be changed.

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