
FORENSIC SCIENCE IN INDIA: A CONSTITUTIONAL PERSPECTIVE

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ABSTRACT

This paper explores the intersection of constitutional law and forensic science in the Indian legal framework, emphasizing the role of constitutional principles in shaping the ethical and lawful application of forensic techniques. It examines key constitutional provisions, such as Article 20(3), which protects against self-incrimination, and Article 21, which guarantees the right to privacy and protection from torture, as foundational safeguards in criminal investigations. Judicial interpretations, including landmark cases like *Selvi v. State of Karnataka* and *K.S. Puttaswamy v. Union of India*, have reinforced these rights while addressing the admissibility and ethical implications of advanced forensic methods like DNA analysis, narco-analysis, and polygraph tests. The paper highlights how forensic evidence must align with constitutional mandates to ensure fairness and uphold human dignity, particularly in the face of evolving technologies. It also discusses the challenges of balancing the need for efficient evidence collection with individual liberties, underscoring the importance of judicial oversight, informed consent, and strict adherence to legal and ethical norms. By integrating constitutional safeguards with forensic practices, the criminal justice system can enhance its credibility and effectiveness, ensuring that justice is both scientifically sound and constitutionally compliant. The study concludes by advocating for ongoing reforms to address gaps in legal frameworks and promote the responsible use of forensic science in alignment with constitutional values.

INTRODUCTION

Since the beginning of human history, crime has existed, and as communities evolved, so did the necessity for laws to safeguard the rights and welfare of everyone. In order to preserve order, early civilisations established fundamental laws that were enforced against violators in order to protect the society. As a result, organisations devoted to conducting criminal investigations and administering proper justice were eventually established. Eyewitness testimony was frequently crucial to justice in the past. Nevertheless, eyewitnesses weren't always trustworthy. They may be coerced into lying or swayed by bribes or threats, which would make it challenging to ascertain the truth. To get confessions, detectives even used brutal techniques in certain situations. As society developed, however, people came to understand that this was cruel and that sometimes the wrong person was punished.

The word "**forensic**" comes from the Latin word *forensis*, meaning "**connecting to the court of law.**" In legal terms, forensic science applies scientific principles to help answer complex questions in court and ensure justice. It combines the expertise of scientists and legal professionals, making it effective and reliable in the legal process.

The integration of forensic science into the criminal justice system has greatly aided judicial officers in fulfilling their responsibility to administer justice, as it is one of, if not the only, fields that offers and provides evidence in the form of reports that are as accurate and as close to the truth as possible, with virtually no possibility of any discrepancy in their findings. Forensic science is used because it is founded on the scientific process, whose findings are universal and impervious to manipulation or falsifying.¹

MODERN FRAMEWORK OF FORENSIC JUSTICE

Human testimonies in legal cases are often influenced by factors like manipulation, pressure, faulty memory, and biases, leading to unjust outcomes. Witness statements, critical in legal proceedings, can sometimes be swayed by personal grudges or prejudices, resulting in miscarriages of justice. In contrast, forensic evidence provides a reliable and impartial foundation for investigations, relying on concrete facts to uncover the truth. However, forensic justice faces challenges, particularly in India, where limited resources and lack of awareness in

1. Dr.Ashu Dhiman & Mr. Param Bhamra, "Evidentiary value of forensic reports and legal implications" 2 *NFSU Journal of Forensic Justice* 7 (2023).

the criminal justice system which often cause delays and inefficiencies. While forensic science has advanced significantly, pressing issues remain unresolved.

India has made steps in recognizing the importance of forensic evidence in its criminal justice framework. Legislative measures, such as the Bharatiya Nagarik Suraksha Sanhita, 2023 and the Bharatiya Sakshya Adhiniyam 2023, highlight efforts to strengthen forensic practices. These laws mandate the involvement of forensic experts in crime scene investigations, especially for serious cases with severe penalties. To address backlogs in forensic analysis, the government has allocated additional resources to enhance forensic laboratories' infrastructure and capacity. These efforts aim to expedite evidence collection and analysis, improving the overall efficiency of the justice system.²

CONSTITUTIONAL PRINCIPLES AND THEIR IMPLICATIONS FOR FORENSIC SCIENCE

The relationship between constitutional law and forensic science is a crucial component of the justice system. Forensic science, which applies scientific techniques to investigate crimes, is vital in determining facts and establishing guilt or innocence. However, its application must align with constitutional principles to protect fundamental rights, ensuring that scientific methods do not infringe upon individual freedoms. In India, the Constitution acts as the foundational guide for the legal system, influencing the use and collection of forensic evidence while ensuring that individual rights are respected during criminal investigations and trials.

The Indian Constitution, as the highest legal authority, defines the rights and responsibilities that safeguard individual freedoms. These constitutional safeguards influence forensic science by regulating its application in criminal investigations and legal proceedings. Consequently, forensic science used in law enforcement must adhere to these protections, ensuring that the techniques employed are both scientifically valid and legally acceptable.

CONSTITUTIONAL GUIDELINES IMPACTING FORENSIC SCIENCE

➤ ARTICLE 20(3)

The right to self-incrimination is given under Article 20 (3) of the Constitution of India which

2. National Human Rights Commission, *Forensic Science and Human Rights* (Bharat Lal ed., 1st ed.2023).

provides that an accused shall not be compelled to be a witness against himself. Thus, it is like an immunity that is available to the accused. This right is based on a legal maxim, '*Nemo tenetur podre accussare seipsum*' which means that no person is obliged to incriminate himself.³

Article 20(3) of the Indian Constitution guarantees the right against self-incrimination, stating that no person accused of a crime can be forced to testify against themselves. This protection ensures a fair trial and prevents coercion in criminal investigations. Self-incrimination occurs when an accused individual provides statements, confessions, or actions that could prove their guilt. The accused is presumed innocent until proven guilty, with the prosecution bearing the burden of proof. This right also includes the ability to remain silent, preventing the state from using force or coercion to extract statements that could be used against the accused.

There were various queries that arise in relation to forensic evidences as whether these are in contradiction or violation to Art. 20(3), therefore, court in *The State of Bombay v. Kathi Kalu Oghad & Others*⁴ has held that if the offender provides specimen signature, blood, hair, thumb impression or semen then such person will not come under the meaning of "being a witness" as mentioned in the article. Hence, the offender cannot raise objection as to the DNA examination that is being done for purpose of trial and investigation.

Further, the debate arose in relation to narco-analysis. In narco-analysis, the officer who is investigating the case tries to procure the statement from a person who is in a semi-conscious state so, that such statement can be used as evidence. Though such procedure possesses certain question involving law and ethics. This method of forensic science was also seen as a violation to Art.20 (3). Therefore, in the matter of *Ramchandra Reddy and Ors. v.State of Maharashtra*⁵, the High Court of Bombay has upheld the authenticity for the usage of brain fingerprinting, narco-analysis or truth serum and lie detector test. The court has upheld the special court order which allowed the SIT to carry out the scientific tests on the offender as well as the main offender in case of stamp paper scam.

3. Nishtha Garhwal, *Right to Self-incrimination and forensic science: a critical study*, 27th December 2024, 01:25 PM) <https://blog.ipleaders.in/right-self-incrimination-forensic-science-critical-study/>

4. The State of Bombay v. Kathi Kalu Oghad and Others 1961 AIR 1808

5. Ramchandra Reddy and Ors. v. State of Maharashtra 2004 ALL MR (Cri) 1704

6. Nandini Satpathy v. P.L. Dani (AIR 1978 SC 1025)

7. V S Kuttan Pillai v. Ramakrishnan and Anr 1980 SCR (1) 673

In, *Nandini Satpathy v. P.L. Dani*⁶, this case reinforced the principle that no person can be compelled to answer questions or provide evidence that may incriminate them. It established the broad interpretation of Article 20(3), protecting the accused from self-incrimination, which is critical when using forensic techniques like polygraph tests or blood tests.

In the case of *V S Kuttan Pillai v. Ramakrishnan and Anr*⁷, the Court held that if the prosecution wishes to search or seize documents from the accused's possession, a warrant must be issued, emphasizing that the accused's rights cannot be infringed upon without due process.

However, if the accused voluntarily waives their right to remain silent and makes a statement or confesses willfully and without any compulsion, such statements can be used as evidence against them in court. This highlights that any evidence obtained from the accused must be done so within the legal framework of consent, ensuring the protection of their fundamental rights under Article 20(3).

In forensic science, these principles are particularly important when collecting evidence from the accused. Techniques like narco-analysis, polygraph tests, and brain mapping, which attempt to extract information directly from the accused, have been scrutinized under Article 20(3) because they risk compelling the accused to provide testimony that could incriminate them. In the landmark case of *Selvi v. State of Karnataka*⁸ the Supreme Court ruled that such techniques violate Article 20(3) unless there is voluntary consent, reinforcing the constitutional protection against forced self-incrimination.

The judgment is an excellent example of how the judiciary, in the true sense, is the guardian of the fundamental rights of citizens guaranteed by the constitution. The rights of an accused are important because the Indian criminal system is based on the principle of 'innocent until proven guilty'. during the investigation and trial, a narration is already set against the accused and suspects and the police use their power and every resource to prove against the accused and suppress them. Article 20(3) protects the accused from such exploitation. The judiciary in the present judgment reinforced the rights of the accused and widened its scope by including polygraph tests, narcoanalysis tests and BEAP tests within Article 20(3) of the Constitution. As under polygraph tests, narcoanalysis tests, and BEAP tests the information is not received from the typical method of investigation, this created confusion about whether or not these

8. *Selvi v. State of Karnataka* 2010 AIR SCW 3011

impugned techniques was not the conventional approach in an investigation, the Supreme Court observed that the receiving of psychological responses without the prior permission of the subject is violative of Article 20(3) of the Constitution.⁹

In *Dinesh Dalmia v. State*¹⁰, The Madras HC ruled that “obliging an accused person to undergo narco-analysis does not constitute forced testimony.

Thus, the connection between Article 20(3) and forensic science lies in ensuring that forensic methods do not violate the accused's right to remain silent or force them into self-incrimination. Forensic science must operate within the boundaries set by the Constitution, respecting the dignity, freedom, and legal protections of the accused while contributing to the search for truth.

➤ **RIGHT TO PRIVACY UNDER ARTICLE 21**

The Right to Privacy is a fundamental right under Article 21 of the Indian Constitution, recognized explicitly in the landmark judgment of *K.S. Puttaswamy v. Union of India*¹¹. This right ensures that individuals can maintain control over their personal information and protects them from arbitrary intrusions by the state or others. In the context of forensic science, this right becomes critically important when personal data or biological samples are involved, such as in DNA analysis, fingerprinting, or biometric identification.

Forensic science is essential in the criminal justice system, yet it frequently involves gathering sensitive personal data, including genetic material, fingerprints, or facial recognition details. If not carefully regulated, the use of these methods can compromise an individual's privacy. For instance, the collection of DNA samples for forensic purposes raises concerns about the potential misuse or unauthorized storage of such data. Improper management of forensic data, like keeping DNA profiles in unregulated databases, may result in privacy violations and the risk of misuse, including the use of genetic information for purposes beyond legal proceedings.

The Puttaswamy case established a "triple test" for any restriction on privacy: it must be legal, necessary, and proportionate. This test applies directly to forensic science, ensuring that any

8. Sai Shriya Potla, *Selvi v. State of Karnataka*(2010): case analysis, 27th December 2024 02:08 PM
https://blog.ipleaders.in/right-remain-silent-case-commentary-smt-selvi-v-state-karnataka/#Analysis_of_judgment_in_Selvi_v_State_of_Karnataka_2010

9. *Dinesh Dalmia v. State* 2006 Cri LJ 2401

10. *K S Puttuswamy v. Union of India* AIR 2017 SC 4161

forensic procedure that invades personal privacy must be justified by a legitimate purpose, such as solving a crime, and must be carried out with the least intrusive means necessary. For example, DNA collection must be done with informed consent, and its storage should be regulated to prevent unauthorized access.

Another important case is, *R. Rajagopal v. State of Tamil Nadu*¹² This case is important because it established the Right to Privacy as a constitutional right, impacting forensic science when it involves the collection of personal data, including photographs, voice samples, and other biometric identifiers. This decision reinforced the need for privacy safeguards when conducting forensic procedures.

In *B. K. Pavitra v. Union of India*¹³, focus was on the Right to Privacy in relation to the collection of biometric data by the state. The Supreme Court ruled that the Aadhaar scheme, which collects biometric data, should be implemented with safeguards to protect individuals' privacy. This judgment has clear implications for the way biometric data or genetic information is used in forensic science, ensuring that such data is collected with consent and protected from misuse.

The case of *Shiv Kumar Yadav v. State (NCT of Delhi)*¹⁴ was related to the issue of DNA evidence and its use in criminal trials. The court upheld the admissibility of DNA evidence in court while emphasizing that its collection and analysis should follow strict protocols to avoid errors or contamination. This case is a critical precedent for the use of modern forensic techniques and their constitutional compliance.

These cases underline that forensic science must always align with constitutional guarantees, ensuring fairness and justice in criminal proceedings.

➤ RIGHT AGAINST TORTURE

India has established legal mechanisms to ensure that forensic evidence is collected ethically and in line with the constitutional rights of individuals. India's Constitution does not explicitly

11. R. Rajagopal v. State of Tamil Nadu 1995 AIR 264

12. B.K. Pavithra v. Union of India (2012) 7 SCC 1

13. Shiv Kumar Yadav v. State of NCT Delhi (2016) 2 SCC402

14. Rahul S K, 'Custodial Torture in India: Need for Separate Legislation (2022) SSRN Electronic Journal, available at <https://ssrn.com/abstract=4226400> (last visited Dec.27, 2024)

mention "torture," but the right against torture is inferred from Article 21, which guarantees the right to life and personal liberty. The judiciary has consistently interpreted Article 21 to include protection against torture, both in custodial and non-custodial settings. Article 20(3) further safeguards an individual from being compelled to be a witness against themselves, which includes protection from self-incriminating confessions obtained through coercion or torture.

Article 21 guarantees the right to life and personal liberty, including the right to protection from torture or cruel, inhuman, or degrading treatment. Similarly, Article 20(3) ensures protection against self-incrimination, meaning no individual can be forced to testify against themselves or provide evidence through coercion or torture.¹⁵ These constitutional provisions form the bedrock of the Indian legal framework, guaranteeing that no evidence obtained through torture or coercion is admissible in court.

Furthermore, provisions within the Indian Evidence Act and the Criminal Procedure Code (CrPC) regulate the collection and admissibility of forensic evidence. Section 53 of the CrPC allows police to take bodily samples for forensic analysis, such as blood, hair, or saliva, but only with the consent of the accused or through a court order. Section 164 of the CrPC ensures that any confessions made during police custody must be recorded by a magistrate, guaranteeing that they are voluntary and not coerced.

Despite existing legal protections, ensuring a proper balance between forensic science and human rights remains challenging. Misuse of forensic techniques, coerced confessions, or evidence collected through force can compromise the justice system, leading to wrongful convictions or the release of guilty individuals. Thus, strict adherence to legal safeguards is essential to protect individuals from torture while preserving the reliability of forensic science in upholding justice.

Techniques such as DNA analysis, polygraph tests, fingerprinting, and toxicology tests play a critical role in gathering objective evidence to support justice. However, these methods must be applied in a manner that respects the rights of the accused. While forensic evidence is vital for uncovering facts and ensuring fair trials, its collection must not infringe upon the right to

15. D K Basu v. State of West Bengal AIR 1997 SC 610

be free from torture.

India, as a signatory to international human rights agreements like the United Nations Convention Against Torture (UNCAT), is obligated to prevent torture and cruel, inhuman, or degrading treatment. Although the treaty has not been ratified, India's domestic laws and judicial decisions reflect a commitment to combating torture and upholding human rights.

Numerous landmark rulings in India have highlighted the critical need to balance forensic science with human rights, particularly in safeguarding individuals from torture and ensuring the voluntary collection of evidence. These judgments have significantly influenced the legal framework, shaping guidelines that govern the application of forensic science in criminal investigations.

Notable Case Laws in India

1. D.K. Basu v. State of West Bengal¹⁶

This landmark case addressed custodial torture and established guidelines to prevent its occurrence. The Supreme Court mandated measures such as medical examinations of detainees, access to legal representation, and proper documentation of arrests. It recognized the right against torture as an integral part of the right to life under Article 21 of the Constitution. The judgment also emphasized that forensic techniques, like DNA analysis or polygraph tests, must not be used on individuals subjected to custodial torture, ensuring that evidence is collected in compliance with constitutional rights.

2. Selvi v. State of Karnataka¹⁷ (2010)

In this case, the Supreme Court prohibited the use of involuntary forensic techniques such as narco-analysis, polygraph tests, and brain-mapping without the informed consent of the accused. It ruled that these methods could lead to coerced confessions, violating the right against self-incrimination under Article 20(3) of the Constitution. The judgment underscored that forensic practices must respect human rights and adhere to ethical standards.

16. Selvi v. State of Karnataka 2010 AIR SCW 3011

17. State of Punjab v. Ajaib Singh 1995 AIR 975

18. Nandini Satpathy v. P.L. Dani (AIR 1978 SC 1025)

3. State of Punjab v. Ajaib Singh¹⁸

This case reinforced that confessions obtained through torture or coercion are inadmissible in court, as they violate the constitutional protection against self-incrimination under Article 20(3). It highlighted the need to safeguard individuals from forced confessions, ensuring that forensic evidence is obtained lawfully and ethically.

4. Nandini Satpathy v. P.L. Dani¹⁹

The Supreme Court held that no individual could be compelled to provide evidence that may incriminate them, further reinforcing protections under Article 20(3). This principle extends to coercive forensic practices, prohibiting methods that compromise the right to silence.

5. State of Bombay v. Kathi Kalu Oghad²⁰

This case clarified that physical evidence like fingerprints or handwriting samples does not infringe upon the right against self-incrimination, provided it is collected without coercion. The judgment emphasized that evidence must be obtained through lawful and ethical means.

6. Sheela Barse v. State of Maharashtra²¹

Focusing on custodial violence, this case mandated judicial oversight and medical examinations for detainees, ensuring humane treatment during evidence collection. It set important precedents for ethical forensic practices.

7. Ramchandra Reddy v. State of Maharashtra²²

The Court ruled that narco-analysis could only be conducted with the accused's consent. This judgment highlighted the ethical dilemmas surrounding certain forensic techniques and stressed the need to balance investigative requirements with individual rights.

19. Nandini Satpathy v. P.L. Dani (AIR 1978 SC 1025)

20. State of Bombay v. Kathi Kalu Oghad and Others 1961 AIR 1808

21. Sheela Barse v. State of Maharashtra AIR 1983 SC 378

22. Ramchandra Reddy and Ors. v. State of Maharashtra 2004 ALL MR (Cri) 1704

23. K S Puttuswamy v. Union of India AIR 2017 SC 4161

8. Justice K.S. Puttaswamy v. Union of India²³(2017)

Although centered on the right to privacy, this case significantly impacted forensic science by asserting that the collection and use of biometric or genetic data must respect individual

dignity. The ruling reinforced that evidence collection must be free from coercion and aligned with constitutional protections.

9. Shashi Kant v. Central Bureau of Investigation²⁴ (2010)

The Delhi High Court emphasized adherence to ethical guidelines in forensic evidence collection to prevent violations of the accused's rights. It reaffirmed that evidence obtained through coercion or torture is inadmissible, reinforcing constitutional safeguards.

These rulings collectively establish a comprehensive legal framework that prioritizes the protection of human rights in forensic science. They underscore the importance of conducting investigations ethically, ensuring that forensic techniques are used as tools of justice while upholding constitutional and human dignity.

➤ RIGHT TO BE FORGOTTEN

The Right to Be Forgotten (RTBF), is an emerging concept in Indian law, which poses critical questions about the retention, use, and erasure of personal data, particularly in sensitive domains like forensic science. While forensic science plays a pivotal role in criminal investigations by providing scientific evidence, it also generates and retains personal data that may conflict with an individual's privacy rights.

The right to be forgotten was recognized for the first time in India through the judgment delivered by Karnataka High Court in the matter of Sri Vasunathan vs The Registrar-General in 2017. A decade ago, however, a similar term, namely the "right to forget," was already a topic of debate. But viewed precisely, the active and the passive side of the "forget" medal are not identical, and the right to be forgotten should not be confused with the right to forget as happens frequently in blog discussions.²⁵

24. Shashi Kant v. Central Bureau of Investigation AIR 2007 SC 351

25. Prashant Malik, "Privacy Law: Right to be Forgotten in India, 8 NLIL LR (2018)

While the Supreme Court of India has not directly dealt with cases linking the Right to Be Forgotten (RTBF) and forensic science, there are several landmark decisions that indirectly establish the foundation for understanding the interplay between privacy rights and data retention, which can be applied to forensic contexts:

Justice K.S. Puttaswamy v. Union of India²⁶

This landmark case recognized the right to privacy as a fundamental right under Article 21 of the Indian Constitution. The judgment stated that informational privacy, including the right to control one's personal data, is intrinsic to the right to privacy. This can extend to requests for erasure of personal data, such as forensic evidence, if it is no longer necessary or relevant. Hence, individuals may claim RTBF for personal forensic data, such as DNA profiles, once its purpose (e.g., criminal investigation or trial) has been fulfilled.

Jorawar Singh Mundy v. Union of India²⁷

The Delhi High Court delinked online search results related to an acquitted person's criminal case, recognizing their RTBF. Though not a Supreme Court decision, this case shows judicial recognition of RTBF in India and its potential application to forensic data, especially when its retention could harm a person's reputation post-acquittal. A similar argument could be made for removing forensic evidence from databases when it no longer serves a legitimate purpose.

Shreya Singhal v. Union of India²⁸ (2015)

This case struck down Section 66A of the IT Act, 2000, as unconstitutional, establishing the importance of balancing freedom of expression and privacy. Though not directly about forensic science, the case underscores the need for proportionality in restricting fundamental rights. Prolonged retention of forensic data, particularly for acquitted individuals, must be proportional to public interest.

26. K S Puttaswamy v. Union of India AIR 2017 SC 4161

27. W.P.(C)3918/2021

28. Shreya Singhal v. Union of India AIR 2015 SC 1523

Aadhaar Case²⁹ (Justice K.S. Puttaswamy v. Union of India, 2018)

The Supreme Court emphasized data protection principles, including purpose limitation, data minimization, and necessity, while upholding Aadhaar's validity for specific purposes. These principles can guide forensic data retention policies, suggesting that data, such as DNA profiles, should not be retained indefinitely and should be erased once its purpose is served.

Manoj v. State of Madhya Pradesh³⁰ (2022)

This case emphasized the need for proportionality and fairness in sentencing but also touched upon the use of scientific evidence in criminal trials. Though not directly related to RTBF, the case highlights the growing role of forensic evidence in ensuring justice. Proportionality principles discussed here may apply to forensic data retention, balancing investigative needs with privacy rights.

These foundational judgments can serve as guiding principles for future cases at the intersection of forensic science and the RTBF.

CONCLUSION

The integration of forensic science within the Indian criminal justice system represents a significant advancement in ensuring objective and reliable evidence-based adjudication. However, its application must be guided by constitutional principles to safeguard fundamental rights such as the protection against self-incrimination, the right to privacy, and freedom from custodial torture. The evolving legal framework, including the provisions under the Bharatiya Nyaya Sanhita, 2023, demonstrates India's efforts to modernize forensic practices while maintaining judicial oversight and ethical standards. Nonetheless, challenges such as the lack of uniform admissibility criteria, limited awareness, and the potential for misuse of forensic techniques underscore the need for continuous reforms. By adhering to constitutional mandates and fostering a balanced approach, forensic science can remain a vital tool in delivering justice without infringing upon individual liberties.

29 .Justice K.S. Puttaswamy vs. Union of India, (2017) 10 SCC 1

30. Manoj v. State of Madhya Pradesh Crl Appeal No. 248-250 of 2015