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## **“DNA PROFILING UNDER INDIAN LAW: EXAMINING THE BNSS, BSA, AND CONSTITUTIONAL DIMENSIONS OF FORENSIC EVIDENCE”**

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### **Abstract**

DNA technology has been recognized as one of the most revolutionary techniques employed in modern criminal jurisprudence, which promises to provide unparalleled accuracy to identify criminals, exonerate the innocent, and settle civil disputes regarding paternity or identity. In India, however, DNA evidence is administered without a specific standalone legislation but relies on a number of legislative provisions scattered across various procedural and evidence laws. The present paper aims to critically evaluate the statutory framework on DNA evidence in the Indian criminal justice system, with specific reference to the newly enacted Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) and the Bharatiya Sakshya Adhiniyam, 2023 (BSA), which have repealed the old Code of Criminal Procedure, 1973, and the Indian Evidence Act, 1872, respectively. The study has also analyzed the relevant provisions of BNSS Sections 51, 52, 53, 184, 193, and 329, along with BSA Sections 39(1) and 116, to understand the relationship between the relevant provisions of the Prevention of Terrorism Act, 2002, with Section 27 of the Prevention of Terrorism Act, 2002.

The paper also deals with the constitutional implications of the collection of DNA evidence, particularly with regard to the Right to Privacy and Personal Liberty under Article 21 of the Constitution of India, as well as the Right to remain silent under Article 20(3), with regard to the judgments of the Supreme Court of India in the cases of the State of Bombay vs. Kathi Kalu Oghad, Smt. Selvi vs. State of Karnataka, and Nandlal Wasudeo Badwaik vs. Lata Nandlal Badwaik. The paper proves through the analysis of the statutory provisions and the decisions of the Courts that while Indian Courts are increasingly accepting the validity and admissibility of DNA evidence, there are tremendous lacunas and inconsistencies in the process and balance between the right to investigate and the right to liberty and privacy due to the lack of comprehensive and dedicated DNA legislation in India.

**Keywords:** DNA Technology, BNSS 2023, BSA 2023, Forensic Evidence, Article 20(3), Article 21, Criminal Justice, Statutory Framework, Paternity, Self-Incrimination.

## Introduction

Science and law have rarely been as intertwined as in the area of DNA technology. The introduction of DNA technology in the 1980s through Sir Alec Jeffreys' pioneering work in DNA fingerprinting has changed the evidentiary landscape of the criminal justice system in the world over since its introduction in the area of forensic science. The role of DNA evidence has gradually become the central area of criminal and civil jurisprudence in India, from the identification of perpetrators of sexual crimes and homicide to the determination of paternity and the identification of disfigured remains, as in the assassination of former Indian Prime Minister Rajiv Gandhi in 1992 and the Gujarat riots in 2002.

Yet, in spite of this increasing reliance on DNA technology in the Indian judicial system, a paradox is noted in that there is a lack of specific comprehensive legislation exclusively dealing with DNA evidence. Instead, a regulatory vacuum is noted in that a plethora of provisions is scattered throughout various procedural and evidentiary codes, which have been reorganized under the new criminal laws of 2023. The promulgation of the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS), replacing the Code of Criminal Procedure, 1973, and the Bharatiya Sakshya Adhiniyam, 2023 (BSA), replacing the Indian Evidence Act, 1872, is a landmark legislative event that reorganizes the regulatory scheme of DNA evidence in India.

The constitutional aspects of the question also raise additional layers of intricacy. Compulsory collection of biological material for the purpose of analysis through DNA technology inevitably raises issues of fundamental rights, such as the right to life and liberty and the right to privacy as embodied in Article 21 of the Constitution of India, and the right to refuse self-incrimination as embodied in Article 20(3) of the Constitution of India. The Indian courts have been grappling with such conundrums and have given a plethora of judgments on the issue. Some of the landmark judgments on the issue are *Smt. Selvi & Ors. v. State of Karnataka* and *Nandlal Wasudeo Badwaik v. Lata Nandlal Badwaik*.

The paper aims to conduct an in-depth and critical analysis of the legislative framework in India on the subject of DNA technology. It attempts to outline the provisions in the BNSS and BSA, the relevance of Section 27 of the Prevention of Terrorism Act, 2002, and the

constitutional validity of the collection of DNA evidence under Articles 20(3) and 21 of the Constitution. The paper attempts to evaluate the legislative framework and identify gaps in the structure that require legislative intervention in the field. The research is set against the backdrop of global best practices and the recommendations of the Law Commission of India's Report No. 271 on "Human DNA Profiling," published in 2017, which itself acknowledged the legislative gap in the field.

Research Questions

### **RESEARCH OBJECTIVES**

1. To what extent do the provisions contained in the Bharatiya Nagarik Suraksha Sanhita, 2023, and the Bharatiya Sakshya Adhiniyam, 2023 offer an adequate framework for the collection, examination, and admissibility of DNA evidence in criminal proceedings in India?
2. How have the Indian courts balanced the conflicting constitutional interests of the right to privacy/personal liberty guaranteed by Article 21 of the Indian Constitution, and the right to remain silent guaranteed by Article 20(3), with the investigation potential of DNA evidence, and has the Indian framework adequately addressed the need to have a DNA legislation in the country?

### **METHODOLOGY**

The methodology to be followed in the present research is a doctrinal legal research methodology, which would rely on the use of primary as well as secondary sources of law to analyze the legislative and constitutional framework on the subject of DNA technology in India. The primary sources of law to be relied upon would include the relevant legislation on the subject, such as the Bharatiya Nagarik Suraksha Sanhita, 2023, the Bharatiya Sakshya Adhiniyam, 2023, the Prevention of Terrorism Act, 2002, the erstwhile Code of Criminal Procedure, 1973, the Indian Evidence Act, 1872, and the constitutional provisions on the subject under Articles 20(3), 21, 51A, and 246 of the Constitution of India. In addition to the aforesaid sources, the decisions of the Supreme Court of India and various High Courts would also be relied upon to understand the changing scenario on the subject of DNA evidence. In addition to the aforesaid primary sources of law, the research would also rely on the secondary sources of law, which would include books, journal articles, as well as the 271st Report on Human DNA Profiling, 2017, published by the Law Commission of India.

## **LITERATURE REVIEW**

The body of literature on DNA technology and the administration of justice is based on a vast amount of research material from the fields of forensic science, law, and medico-legal studies. **Jyothirmoy Adhikary's "DNA Technology in the Administration of Justice"** (Lexis Nexis Butterworths, 2007) is a basic scientific and legal analysis of DNA profiling, which includes the basic techniques of DNA profiling, such as RFLP, PCR, and STR, along with the reception of DNA evidence under the Indian legal system. This is complemented by the traditional **Modi's Medical Jurisprudence and Toxicology**, dealing with the evidentiary value and admissibility of various forensic science techniques, including DNA profiling, in Indian courts, thus making it an essential reference book for both legal and medical professionals. The book **Dr. Gupta & Agarwal's Medical Jurisprudence and Toxicology (Practice and Procedure)** (Premier Publishing Co., 2011) also discusses the subject of DNA profiling in the context of civil and criminal investigations.

**B.S. Nabar's Forensic Science in Crime Investigation** (Asia Law House, 3rd Ed., 2007) discusses the historical development of forensic science, with special focus on DNA fingerprinting. **Dr. B.R. Sharma's Forensic Science and Criminal Investigation and Trials** (Universal Law Publishing Co., 4th Ed., 2003) discusses the subject of RFLP and PCR techniques and their revolutionary role in criminal investigations.

On the one hand, from the point of view of jurisprudence and law, the **Law Commission of India's Report No. 271: Human DNA Profiling**, 2017, outlines the analysis of the legislative vacuum that currently exists in India. Furthermore, the academic writings of **Dr. Durga Pada Das, DNA Fingerprinting and its Impact on the Administration of Criminal Justice**, MLJ, 2005, and **Dr. Subodh K. Singh, Application of DNA Profiling in the Administration of Criminal Justice**, MLJ, 2011, discuss the efficacy of the use of DNA technology in the judicial courts of India and abroad. **Dr. Singh's** article specifically addresses the affirmative attitude of the Supreme Court of India in the case of *Sharada v. Dharmpal*, as well as the applicability of Section 112 of the Indian Evidence Act, 1872. **Justice in Genes, V.R. Dinkar**, Asia Law House, 2008, rounds off the academic writings on the topic, which specifically address the capacity of the judiciary of India to deal with the complexities of the issue and the use of advanced techniques of identification, including mitochondrial DNA and Y chromosome analysis.

## **DNA TECHNOLOGY'S PRACTICAL USES IN CRIMINAL AND CIVIL CASES ARE:**

- (a) Identification of offenders in sexual assault cases:** DNA evidence is quite beneficial in such circumstances. Following the rape occurrence, the biological evidence obtained from the crime scene or samples taken from the victim's body are analyzed in comparison to samples gathered from the perpetrator using DNA technology. The comparative results may assist in determining if the suspect perpetrated the rape. If the suspect has perpetrated rape, it can be determined with better precision
- (b) Identification of offenders in homicide cases:** In homicide cases, DNA technology is employed to ascertain the actual perpetrator of the crime. The perpetrator of murder frequently leaves biological evidence at the crime scene, such as bloodstains, hair follicles, and bodily fluids. Frequently, bloodstained items such as weapons, swords, and the victim's bloodied clothing may be confiscated from the accused's possession. All these material evidences are pertinent for DNA analysis, which demonstrates the presence of the accused at the crime scene.
- (c) Determination of a child's paternity / maternity:** Typically, all individuals inherit their DNA profile from their parents. If the paternity or maternity of a child is contested, a simple comparison of DNA from the father or mother with that of the kid can provide a definitive result with enhanced accuracy.
- (d) Identification of disfigured remains:** In India, DNA technology was employed to identify the disfigured remains of both the victim and the defendant who perished in the Rajiv Gandhi assassination case in 1992. It was utilized to identify remains retrieved from mass graves in Gujarat following the Hindu-Muslim riots in 2002. It was also utilized to identify the individuals who perished in the September 11 attacks on the Twin Towers in the United States in 2001.
- (e) Exonerate the innocent:** DNA technology serves not only to identify the true perpetrator but also to exonerate the innocent suspect if they are not involved in the crime.

## **SOURCES OF DNA**

DNA is almost found in every living being. It can be extracted from any body cells of an individual.

They are:<sup>1</sup>

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<sup>1</sup> Dr.B.R.Sharma, Forensic Science in the Criminal Investigation and Trials, Universal Publishing Company, 2003, P.1127

- (i) Blood and blood stains
- (ii) Semen and semen stains
- (iii) Hair and hair roots
- (iv) Fingernail pairings
- (v) Tooth canal root pulp
- (vi) Bodily tissues and body organs
- (vii) Bone marrow and bones
- (viii) Saliva
- (ix) Post-mortem samples
- (x) Faecal waste
- (xi) Blood samples in blood relationship tests
- (xii) Other body fluids

## **STATUTORY FRAMEWORK GOVERNING THE USE OF DNA EVIDENCE IN INDIA**

With the enactment of the *Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS)* and the *Bharatiya Sakshya Adhinyam, 2023 (BSA)* which have replaced the Criminal Procedure Code, 1973 and the Indian Evidence Act, 1872 respectively the statutory framework concerning the use of DNA technology has been restructured under the new criminal laws.

The relevant provisions now include BNSS Sections 51, 52, 53, 184, 193, and 329 (corresponding to Sections 53, 53A, 54, 164A, 173, and 293 of the CrPC), and BSA Sections 39(1) and 116 (replacing Sections 45 and 112 of the Indian Evidence Act, 1872). In addition to these, Section 27(1) of the *Prevention of Terrorism Act, 2002* continues to remain relevant. This chapter also refers to important *constitutional provisions*, namely Article 51A (h) & (j) and Article 246 (Entries 65 and 66 of List I), and further provides a detailed analysis on the constitutional validity of DNA technology in light of Articles 21 and 20(3) of the Constitution of India.

### **THE BHARATIYA NAGARIK SURAKSHA SANHITA, 2023**

Although India lacks a particular separate law just controlling the gathering, analysis, or admissibility of DNA evidence, certain clauses under the criminal procedural system permit DNA profiling under the domain of criminal investigations. Sections 53 and 54 of the previous Code of Criminal Procedure, 1973 (CrPC) were the main rules that indirectly supported the use of DNA evidence. Sections 51 and 53 of the Bharatiya Nagarik Suraksha Sanhita, 2023

(BNSS) have now accordingly replaced these provisions, which keep and strengthen the scope for medical examination of the accused and arrested individuals by registered medical practitioners.

If there are reasonable grounds to think that such examination would provide evidence pertinent to the inquiry, **Section 51 of BNSS authorizes** a police officer not below the rank of sub-inspector to request a registered medical practitioner to examine the body of a person arrested on a charge of committing an offence. Particularly important in situations involving physical evidence like blood, sperm, or body fluids, which may later be exposed to DNA analysis, this clause allows the use of reasonable force to carry out such an investigation. Moreover, the law requires that such examination be done only by, or under the supervision of, a female registered medical practitioner if the individual to be examined is a woman. This clause reflects the language and purpose of the previous Section 53 of the CrPC.<sup>2</sup>

Simultaneously, **Section 53 of BNSS (formerly Section 54 of CrPC)** lets the detained individual— whether on a formal charge or not—ask for a medical examination by a registered medical practitioner, especially when the individual feels that such examination could provide proof refuting the commission of the crime by him or might show that some other person has committed an offence against his body. The Magistrate is duty-bound to permit such an inspection unless he believes the request to be vexatious, aimed for delay, or harmful to the interest of justice.<sup>3</sup>

<sup>2</sup> **51. Examination of accused by medical practitioner at request of police officer.**

(1) When a person is arrested on a charge of committing an offence of such a nature and alleged to have been committed under such circumstances that there are reasonable grounds for believing that an examination of his person will afford evidence as to the commission of an offence, it shall be lawful for a registered medical practitioner, acting at the request of any police officer, and for any person acting in good faith in his aid and under his direction, to make such an examination of the person arrested as is reasonably necessary in order to ascertain the facts which may afford such evidence, and to use such force as is reasonably necessary for that purpose.

(2) Whenever the person of a female is to be examined under this section, the examination shall be made only by, or under the supervision of, a female registered medical practitioner.

(3) The registered medical practitioner shall, without any delay, forward the examination report to the investigating officer.

*Explanation.* - In this section and sections 52 and 53,-

(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;

(b) "registered medical practitioner" means a medical practitioner who possesses any medical qualification recognised under the National Medical Commission Act, 2019 (30 of 2019) and whose name has been entered in the National Medical Register or a State Medical Register under that Act.

<sup>3</sup> Bharatiya Nagarik Suraksha Sanhita, 2023, Section 53.

*Specifically for sexual crimes*, the Code of Criminal Procedure (Amendment) Act, 2005 modified the CrPC in 2005 adding two further sections: 53A and 164A. Now Sections 52 and 184 of the BNSS, these clauses were crucial in legitimizing and formalizing the application of DNA profiling in rape investigations.

**Section 52<sup>4</sup>** of BNSS addresses the medical examination of the person charged with rape. A registered medical practitioner working in a government hospital or under local authority may conduct such examination when a person is arrested on a charge of committing rape or attempting to commit rape and there are reasonable grounds to believe that an examination of his person will yield evidence regarding the commission of the offence. Under exigent conditions, the rule also allows the participation of any other registered medical practitioner if no such government- employed doctor is accessible within a 16-kilometre radius.

Details such as the name and residence of the accused, the name of the person who brought him, the age of the accused, the presence of any marks of harm, and most crucially, the description of materials gathered for DNA profiling must be included in the medical examination report. The report has to record the exact start and finish times of the examination and be sent straight to the investigating officer, who will present it to the Magistrate following the specified reporting process.

Victim of rape's medical examination is provided in **Section 184 of BNSS**, <sup>5</sup>**which supersedes the previous Section 164A of CrPC**. It says that during the inquiry into rape or attempted rape, the lady claimed to be the victim must be medically examined by a registered medical practitioner working in a government hospital or local authority. Any certified medical practitioner may conduct the examination in the absence of such a practitioner; however, the lady or a legally competent individual acting on her behalf must consent to this.

The law requires that the lady be sent for *examination within 24 hours* after obtaining knowledge connected to the offence. Among other things, the medical report has to specify the name and address of the woman and the person bringing her, her age, the general mental state, injury marks, and especially the description of material gathered for DNA profiling. The rule further stipulates that consent be explicitly documented and that the report be quickly provided

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<sup>4</sup> Bharatiya Nagarik Suraksha Sanhita, 2023, Section 52.

<sup>5</sup> Bharatiya Nagarik Suraksha Sanhita, 2023, Section 184

to the investigating officer for additional Magistrate submission.

*Although Section 51 of BNSS mostly addresses the medical examination of the accused by a registered medical practitioner at the police's request, it is well-settled that courts have more discretionary powers to guarantee justice. In suitable situations, courts could order the investigating agencies to gather bodily samples including blood from the accused for DNA testing. Various High Courts and the Supreme Court have supported the Magistrate's authority to give such orders, particularly when it is required for efficient investigation or to achieve the goals of justice.*

Once the investigation is over, the investigating agency submits a final report under Section 193 of BNSS (replacing the prior Section 173 of CrPC). The investigating officer may request more inquiry under **sub-section (9) of Section 193** <sup>6</sup>if fresh evidence, including DNA evidence, comes to light; the Magistrate may allow the same. Even after the first charge sheet has been submitted, this permits the addition of newly found forensic or DNA-related evidence.

The report of government scientific experts—including those from forensic laboratories—is also considered admissible evidence under **Section 329(4) of BNSS** <sup>7</sup>(previously Section 293(4) of CrPC). If the court finds it required, **Section 329(2)** of BNSS also gives it authority to call and investigate any such expert over the subject-matter of his report. Without demanding the expert's physical presence in every case, these clauses are essential in justifying the evidentiary value of DNA results during trial.

Furthermore, even if the accused is out on anticipatory bail under **Section 438 of CrPC (482 in BNSS)**, **the powers under Section 51 of BNSS still apply**. The investigating officer might still ask the Magistrate to mandate the gathering of other biological evidence or blood samples required for DNA testing. The courts have made clear that such investigatory techniques are not naturally violative of Article 20(3) of the Constitution if the DNA collection is based on tangible evidence rather than testimonial in character.

Therefore, the framework under BNSS guarantees that both the rights of the accused and the interests of justice are protected and lays down a thorough, legally permissible system for the

<sup>6</sup> Bharatiya Nagarik Suraksha Sanhita, 2023, Section 193(9)

<sup>7</sup> Bharatiya Nagarik Suraksha Sanhita, 2023, Section 329

gathering, examination, and use of DNA evidence, especially in cases involving sexual offences, even if it does not establish any particular procedural code just for DNA profiling.

In *Thaniel Victor v. State of Madras*,<sup>8</sup> the accused was arraigned on a charge of rape under Section 376 IPC and was extended anticipatory bail under Section 438 CrPC. On inquiry, the police filed an application before the Magistrate under Section 53 CrPC to get the accused medically examined by a registered medical practitioner to determine his potency—i.e., whether physically he was capable of committing the said act. The Magistrate granted the application and issued summons to the accused. The accused appealed against this order, contending that Section 53 of the Code only applies to "arrested persons" and that, having been granted anticipatory bail and never having been actually arrested, he could not be required to be medically examined.

But the High Court overruled this contention. It concluded that an individual who is granted anticipatory bail is still under the control of the legal system and constructive custody of the Court.

Although such an individual is not physically in the custody of the police, he remains legally an "accused" and is not beyond the reach of investigation. The High Court upheld the Magistrate's authority to order such a medical examination, noting that although Section 53 makes reference to "arrested" individuals, the ambit of the provision cannot be so limited as to thwart the investigation of serious offenses like rape.

The Court cited *Pokar Ram v. State of Rajasthan*,<sup>9</sup> in which the Supreme Court made it clear that release on bail does not take a person out of the ambit of investigation. Provided the person remains an "accused," the Court can permit such steps as medical examination if it facilitates investigation or trial. Likewise, in *Gurbaksh Singh Sibbia v. State of Punjab*<sup>10</sup>, the Supreme Court had held that the grant of anticipatory bail does not intrude upon the power of investigation of the police. The Bombay High Court in *Anil A. Lokhande v. State of Maharashtra*<sup>11</sup> also upheld this line of thought, holding that a person released on bail is yet within constructive custody and thus, Section 53 holds such persons as well.

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<sup>8</sup> Thaniel Victor v. State of Madras, 1991CRILJ2416

<sup>9</sup> AIR 1985 SC 969: (1985 Cri LJ 1175)

<sup>10</sup> AIR 1980 SC 1632: (1980 Cri LJ 1125)

<sup>11</sup> 1981 Cri LJ 125

In, *Neeraj Sharma v. State of Uttar Pradesh*,<sup>12</sup> a similar question arose when the police wanted to collect hair samples of the accused to compare with those found on the deceased. The accused objected, claiming there was no legal provision that allowed this without his consent. However, the High Court clarified that “examination” under Section 53 includes scientific tests such as hair, nail, and blood sampling, and that the Magistrate does have the power to authorize such procedures. The Court emphasized that such examinations are part of effective investigation and are legally justified when they can help prove or disprove the offense.

*Thongorani @ K. Damayanti v. State of Orissa and Others*<sup>13</sup>: This case involved a complainant who had alleged rape, but no medical examination was conducted during the investigation. After the charge sheet was filed and the case committed to the Sessions Court, the complainant sought further investigation under Section 173(8) of CrPC, specifically requesting a DNA test and an ossification test to determine her age. The Sessions Judge initially dismissed the application on procedural grounds, stating it was not filed by the prosecution. However, the High Court overturned this decision and directed the Sessions Judge to reconsider the matter.

Pursuant to the High Court’s order, the Additional Sessions Judge allowed further investigation, directing the ossification test and permitting the investigating officer to take steps for DNA testing. Although the ossification test was completed, the investigating officer failed to conduct the DNA test or blood grouping and instead gave an opinion that such tests were unnecessary. Aggrieved, the complainant filed a writ petition under Articles 226 and 227 of the Constitution of India, seeking judicial direction for DNA testing.

The High Court emphasized the importance of DNA evidence in modern criminal trials, not only as a means of convicting the guilty but also as a tool to exonerate the innocent. It recognized the privacy concerns associated with DNA testing but held that in rape cases, where the paternity of children born out of the alleged act is questioned, DNA testing may be essential for proving or disproving the offense. The Court further clarified that the pendency of the trial does not bar further investigation under Section 173(8) CrPC, and medical tests such as DNA analysis can be directed even after committal of the case, if they serve the interests of justice.

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<sup>12</sup> 1993 CRI. L. J. 2266

<sup>13</sup> 2004 CriLJ 4003

The Court held that denying DNA testing could result in irreparable harm to the complainant and her children by undermining their dignity and casting a shadow on their legitimacy. Accordingly, the writ petition was allowed, and the investigating officer was directed to proceed with DNA testing.

### **BHARTIYA SAKSHYA ADHINIYAM, 2023**

The 1872 Indian Evidence Act, apart from the rules of the Criminal Procedure Code, 1973, is more significant so far as the admissibility of DNA evidence is concerned. **Section 39(1)** <sup>14</sup>of the *Bharatiya Sakshya Adhiniyam, 2023* (formerly **Section 45 of the Indian Evidence Act, 1872**), addresses expert advice. It says that should the court have to form an opinion on a matter of foreign law, or science, art, or as to identification of handwriting (or finger marks), the opinion on that subject of people particularly knowledgeable in such foreign law, art or science, (or in issue as to identification of handwriting) (or finger impressions) are pertinent information. Such people are termed specialists.

In *Kunhiraman v. Manoj*, <sup>15</sup>the first paternity case in India, DNA fingerprinting was discussed in the Court of Chief Judicial Magistrate of Tellichery. The Chief Judicial Magistrate ruled that under Section 45 of the Indian evidence act 1872, expert evidence is Admissible. In this case, the prosecution relied on the testimony of Dr. Lalji Singh (PW4), an eminent expert in molecular biology. The court found his evidence to be cogent and persuasive. It noted that his expertise in cellular and molecular biology placed him on the same footing as other forensic specialists, such as chemical analysts or fingerprint experts, thereby qualifying him as a competent and reliable expert witness. Accordingly, the court accepted his opinion as credible and legally admissible.

There is a legal presumption to establish the child's *parentage under Section 116 of the Bharatiya Sakshya Adhiniyam, 2023* (formerly **Section 112 of the Indian Evidence Act, 1872**),<sup>16</sup> that anyone born during the continuance of a legitimate marriage between his or her

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<sup>14</sup> Section 39(1) in Bharatiya Sakshya Adhiniyam, 2023

(1) When the Court has to form an opinion upon a point of foreign law or of science or art, or any other field, or as to identity of handwriting or finger impressions, the opinions upon that point of persons specially skilled in such foreign law, science or art, or any other field, or in questions as to identity of handwriting or finger impressions are relevant facts and such persons are called experts.

<sup>15</sup> 1991 (2) K.L.T. 190

<sup>16</sup> Section 116 : Birth during marriage, conclusive proof of legitimacy

The fact that any person was born during the continuance of a valid marriage between his mother and any man, or within two hundred and eighty days after its dissolution, the mother remaining unmarried, shall be conclusive

mother and any male, or the mother stayed within two hundred eighty days after her marriage ended, unmarried, shall be definitive evidence that he is the rightful offspring of that father, unless it can be demonstrated that the parties had no access to one another at any moment when that kid might have been conceived.

*The sole exception to question the validity of child under Section 116 of the Bharatiya Sakshya Adhiniyam, 2023, is to show non-access.* The term “access” in Madras High Court in *Krishnappa v. Vennkatappa*<sup>17</sup> is read to imply just chance of sexual intercourse and not efficient entry. A man can only refute this presumption of fatherhood by showing he has no access to the mother at any time during which the kid was conceived, i.e., he must demonstrate to the court that either because of great physical distance or because of his impotence, there was not even a conceivable chance of his having sexual intercourse with the mother at any time during which she could have conceived the kid born. Should he fail to show any of them, he will be considered the father of the child even in the face of unassailable scientific evidence to the contrary.

The term “access” suggests just the presence of chance for marital intercourse. Section 116 of the Bharatiya Sakshya Adhiniyam, 2023, establishes a strong legal presupposition of legitimacy that allows no space for a scientific reply. *Still, litigants have asked the court’s leniency in accepting medical proof to overcome this strong legal presumption.* These initiatives have produced a degree of success, and a consistent line of precedents since the early 1990s now confirms courts’ authority to guide medical evidence in matters they deem appropriate. In these situations, the court has often cited privacy rights as a significant consideration to be weighed before directing a person to submit to any test.

The Supreme Court in *Goutham Kundu v. State of West Bengal* showed the most unwillingness in the use of DNA evidence in settling the paternity conflict resulting from maintenance actions. In the aforementioned situation, the father contested paternity and requested blood grouping test to ascertain parentage to determine a child’s right to receive maintenance under Section 125 of the Code of Criminal Procedure, 1973. The Supreme Court ruled in this regard that the maintenance application served only to prevent maintenance

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proof that he is the legitimate child of that man, unless it can be shown that the parties to the marriage had no access to each other at any time when he could have been begotten.

<sup>17</sup> AIR 1943 Mad 632

payment. The blood test application could not be accepted. It was also maintained that no one could be forced to provide blood for examination against his/her consent, and such a refusal cannot be used to make any negative conclusion about him/her.<sup>18</sup>

Lately in *Bhabani Prasad Jena v. Concernor Secretary*,<sup>19</sup> Orissa State Commission for Women and Another, the Supreme Court outlined the method for courts under DNA test direction. The Apex Court noted, in a case when the court questions paternity of a kid, DNA is a very sensitive and delicate topic.

- One perspective is that while contemporary technology provides ways to determine a child's paternity, one should not hesitate to apply such methods whenever the event calls for it.
- The second perspective holds that the court has to be unwilling to apply such scientific developments and techniques causing infringement of personal privacy of a person and might not only be detrimental to the rights of the parties but can have catastrophic consequences on the kid.

From our perspective, when there is obvious conflict between the right to privacy of a person not to submit himself forcibly to medical examination and court obligation to reach the truth, the court has to use its discretion to determine the truth after weighing the interests of the parties and on reasonable deliberation whether for a just decision in the case, DNA is absolutely required. DNA in a situation pertaining to paternity of a child should not be guided by the court as a matter of course or in a routine manner, whenever such a request is requested. The court must take into account several factors including presumption under Section 116 of the Bharatiya Sakshya Adhiniyam,<sup>20</sup> 2023, advantages and disadvantages of such order, and the test of "eminent need," whether it is not conceivable for the court to reach the truth without application of such test.

Recent Supreme Court ruling overturns the assumption under Section 116 of the Bharatiya Sakshya Adhiniyam, 2023. In *Nandlal Wasudeo Badwaik v. Lata Nandlal Wasudeo Badwaik & Anr, the*<sup>21</sup> case's reality was that the wife submitted a maintenance action under Section 125 of the Criminal Procedure Code, 1973, demanding maintenance for her daughter and herself. She claimed to have begun living with her husband from 1996 and remained with him for

<sup>18</sup> AIR 1993 SC 2295; 1993 SCR (3) 917

<sup>19</sup> (2010) 8 SCC 633

<sup>20</sup> Section 116 of the Bharatiya Sakshya Adhiniyam, 2023

<sup>21</sup> (2014) 2 SCC 576

almost two years, fell pregnant then. She was transported to her parents' residence where she gave birth to a girl child.

The husband-petitioner refuted the claim of his wife that she remained with him since 1996, hence the girl child is not his daughter. He refuted the girl child being his daughter. According to the husband, he had no physical interaction with his wife. He had as well asked for DNA testing. The Magistrate Court approved the wife's plea and awarded maintenance to the wife at Rs. 900/- per month and to the daughter at Rs. 500/- per month. The Court rejected petitioner's assertion to request DNA testing. The Court ruled on the presumption set by Section 112 of the Indian evidence act. The husband submitted a revision petition before the High Court challenging the order of Magistrate Court. Revising failed and the High Court upheld the Magistrate Court's ruling.

aggrieved by the said order, spouse filed a Special Leave Petition with the Supreme Court; leave was given. At the husband's request, Supreme Court had directed DNA testing. DNA test turned out to favor the husband. At the behest of the respondent wife the Supreme Court once more called for re-test. The two exams backed the man's assertion. The Apex Court ruled the applicant (man) was not the biological father of the girl-child. The DNA test findings confirmed the husband's plea that he had no access to the wife when the kid was conceived and hence the Court ruled it could not force the appellant to carry the fatherhood of a kid when the scientific studies show differently. It therefore let go the spouse of the obligation of paying maintenance to the kid.

The *Apex Court defends the acceptability of DNA test* report and ruled that: as mentioned before, the DNA test is a precise test and on that basis, it is obvious the appellant is not the biological father of the girl.

### **TERRORISM PREVENTION ACT, 2002**

DNA technology has also impliedly been permitted by Section 27 of the Prevention of Terrorism Act, 2002. —<sup>22</sup>When a police officer looking into a case requests the Court of a Chief Judicial Magistrate or the Court of a Chief Metropolitan Magistrate in writing for acquiring samples of handwriting, finger-prints, foot-prints, photographs, blood, saliva, semen,

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<sup>22</sup> Section 27 of the Prevention of Terrorism Act, 2002.

hair, voice of any accused person, reasonably suspected to be involved in the commission of an offense under this Act, it shall be lawful for the Court of a Chief Judicial Magistrate or the Court of a Chief Metropolitan Magistrate to direct that such samples be given by the accused person to the police officer either through a medical practitioner or otherwise, as the case may be. Should any accused individual decline to furnish samples as specified in sub-section (1), the Court will draw negative inference against them. Seventy-six in writing Chief Judicial Magistrate or the Court of Chief Metropolitan Magistrate for getting sample of handwriting, fingerprints, footprints, photos, blood, saliva, semen, hair, voice of any accused person, reasonably suspected to be engaged in the commission of an infraction under this Act.

The Court of Chief Judicial Magistrate or the Chief Metropolitan Magistrate may lawfully order that the accused individual provide such samples to the police officer either directly or via a medical professional. Should the accused decline to provide his sample, the Court will infer negatively against him.

### **THE CONSTITUTION**

Under **Part IV of the Constitution of India, Article 51A**<sup>23</sup> lays down the fundamental duties of every citizen. Specifically, *clauses (h) and (j)* emphasize that it is the duty of every Indian citizen to develop a scientific temper, humanism, the spirit of inquiry and reform, and to strive towards excellence in all spheres of individual and collective activity so that the nation may rise to higher levels of achievement. The term “*scientific temper*” includes a mental attitude that emphasizes acquiring reliable and practical knowledge through experimentation and analysis, rejecting blind acceptance of tradition or superstition, and maintaining openness of mind without dogmatism.

In the landmark case of *Rohit Shekhar v. Narayan Dutt Tiwari*, the Delhi High Court’s Division Bench relied on these fundamental duties to endorse the application of DNA testing in the interest of justice. The plaintiff, Rohit Shekhar, filed a suit seeking a declaration that he was the biological son of the former Chief Minister, N.D. Tiwari. During the pendency of the case, Shekhar filed an interim application requesting that Tiwari be subjected to a DNA test. While the Single Judge of the Delhi High Court allowed this request, Tiwari challenged the decision before the Division Bench. The Bench, however, dismissed the appeal and directed

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<sup>23</sup> Article 51A of the Constitution

compliance with the DNA test order. Tiwari then approached the Supreme Court for a stay, which was refused.

Despite multiple directives, Tiwari refused to submit his blood sample and filed an interim application seeking protection from being compelled to do so. The Single Judge held that while physical compulsion could not be used to extract a DNA sample, the refusal to submit could be taken into account as an adverse inference when evaluating the evidence. This order was later set aside by the Division Bench, which emphasized the importance of fundamental duties under Article 51A. The Bench observed that courts are not bound to follow age-old practices when newer, more accurate scientific tools are available to adjudicate disputes and ascertain the truth. It held that if Tiwari continued to defy court orders, the Single Judge was entitled to seek police assistance and use reasonable force to ensure compliance.

In addition to these judicial interpretations, *Article 246 of the Constitution*<sup>24</sup> and *Entries 65 and 66* of the Union List grant the Parliament legislative competence to make laws concerning scientific or technical assistance in crime investigation, research, and coordination of standards in higher education. These provisions reflect the constitutional intent to integrate scientific advancements, like DNA technology, into the legal and investigative framework for public benefit.

However, while embracing such scientific tools, constitutional protections such as the right to privacy under Article 21 and the right against self-incrimination under Article 20(3) must not be compromised. Any application of DNA technology in criminal investigations must balance the public interest in truth and justice with the individual's fundamental rights. The use of DNA testing, therefore, must align with constitutional safeguards to ensure that its application remains both effective and just.

### **Article 21 – Right to Privacy**<sup>25</sup>

Article 21 of the Constitution of India provides that

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

This provision is the cornerstone of constitutional protections for individual rights. The

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<sup>24</sup> Article 246 of the Constitution

<sup>25</sup> Mahendra P.Singh, V. N. Shukla's *Constitution of India*, Eastern Book Company, 11th Edition 2010, P-191

Supreme Court, in the landmark case of *Maneka Gandhi v. Union of India* (AIR 1978 SC 597)<sup>26</sup>, interpreted Article 21 broadly and held that a person can be deprived of life or personal liberty only if two essential conditions are satisfied: first, there must be a valid law; and second, the procedure prescribed by that law must be just, fair, and reasonable. This interpretation ensures that state actions affecting life and liberty must not only follow legal authority but must also conform to standards of fairness and non-arbitrariness.<sup>27</sup>

In the context of this research, a critical issue arises—whether collecting a blood or bodily sample from an individual or an accused person for the purpose of DNA testing infringes the right to privacy under Article 21. The Supreme Court dealt with a related question in the case of *X v. Hospital Z* (1998) 8 SCC 296,<sup>28</sup> where it was revealed through a blood test that the appellant was HIV positive. This information led to the cancellation of his proposed marriage. The question before the Court was whether the hospital was justified in disclosing the appellant's medical condition to the prospective spouse. The Court held that the right to privacy, though implied under Article 21, is not an absolute right. It may be restricted to protect public interest, prevent crime, safeguard health or morals, or protect the rights of others. In this case, the disclosure was justified as it served a higher interest—the right of the prospective spouse to make an informed decision.

A more direct discussion on the constitutionality of DNA testing under Article 21 is found in *H.M. Prakash alias Dali v. State of Karnataka*. The Karnataka High Court examined whether the taking of blood samples for DNA analysis violates personal liberty. It held that modern society requires the use of scientific techniques to determine both guilt and innocence. There is nothing offensive or cruel about taking a blood sample under the legal framework, especially when done under judicial or procedural safeguards. The Court also clarified that Sections 53 and 54 of the Criminal Procedure Code, 1973 were specifically introduced to overcome the limitations of the old Code which did not authorize compulsory medical examination of accused persons. The Court reasoned that as long as such collection of biological evidence is done according to the procedure established by law, it does not violate Article 21.

The Orissa High Court in *Thongorani @ K. Damayanti v. State of Orissa* further addressed

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<sup>26</sup> AIR 1978 SC 597

<sup>27</sup> Dr. J.N.Pandey, *The Constitutional Law of India*, Central Law Agency, 49th Edition, 2012,

<sup>28</sup> 1998 8 SCC 296

whether compelling an accused to undergo DNA testing by providing a blood sample would infringe their rights under Articles 20(3) and 21. The Court held that such a direction is permissible, but must be carefully weighed against the fundamental rights of the accused. Before ordering a DNA test, the court must assess factors such as the nature and gravity of the offense, the accused's potential involvement, physical and mental condition, whether there are less intrusive alternatives, and the reasons, if any, provided by the accused for refusal. The Court emphasized that the right to privacy and personal liberty must be balanced against the public interest in detecting and preventing crime.

### **Article 20(3) of the Indian Constitution – Right Against Self-Incrimination<sup>29</sup>**

Article 20(3) of the Constitution of India guarantees that

*“No person accused of any offence shall be compelled to be a witness against himself.”*

This protection is grounded in the broader objective of safeguarding the personal liberty and dignity of individuals during criminal proceedings. The protection under Article 20(3) consists of three essential elements: firstly, it is available only to a person who is accused of an offence; secondly, it provides protection against compulsion; and thirdly, the compulsion must be in the nature of forcing the accused to give evidence against himself. All three elements must co-exist simultaneously for the invocation of this constitutional protection. If any of these ingredients is absent, the safeguard under Article 20(3) cannot be claimed.

The rationale behind this provision lies in preventing coercive methods and custodial torture during investigation and to ensure that no person is forced to provide evidence that may lead to his own conviction. It recognizes the right of the accused to remain silent when answering questions that might incriminate him. This principle has been a subject of significant judicial scrutiny, especially in cases involving scientific tests such as fingerprint analysis, handwriting samples, DNA profiling, and other forms of medical and forensic examination.

One of the earliest and most authoritative pronouncements on the interpretation of Article 20(3) was made by the Supreme Court in *State of Bombay v. Kathi Kalu Oghad* (AIR 1961 SC 1808),<sup>30</sup> where an eleven-judge bench laid down the scope and limits of the constitutional guarantee. The Court held that the giving of thumb impressions, palm or finger impressions, specimen handwriting, or the showing of parts of the body for purposes of identification does not amount

<sup>29</sup> M.P. Jain, *Indian Constitutional Law*, Wadhwa and Company Nagpur, 5th Edition 2003,

<sup>30</sup> AIR 1961 SC 1808

to being a “witness” under Article 20(3). The decision clarified that the term “to be a witness” means giving oral or written testimony based on personal knowledge and not the mechanical act of furnishing physical evidence. Accordingly, materials like handwriting samples or fingerprints do not involve any volitional or communicative act and hence are not testimonial in nature.

The Court further held that merely being in police custody or making a statement during interrogation does not automatically imply compulsion, unless such compulsion can be established by additional evidence. The reasoning offered by the Court emphasized that constitutional protections should not be interpreted in a manner that hinders effective investigation or the ability of law enforcement to bring offenders to justice. The Court’s interpretation thus drew a clear distinction between “testimonial compulsion” and the collection of material or physical evidence from the body of the accused.

This judicial reasoning was subsequently adopted and applied in various High Court decisions. In *Anil Anantharav Lokhande v. State of Maharashtra*<sup>31</sup> (1981 CriLJ 125), the Bombay High Court reiterated that the collection of blood samples for forensic comparison does not amount to testimonial compulsion and *therefore does not violate Article 20(3)*.

A similar line of reasoning was adopted in *Miss Swati Lodha v. State of Rajasthan (1991 CriLJ 939)*,<sup>32</sup> where the issue was whether an accused charged with rape could be compelled to undergo a DNA test by giving a blood sample. The Rajasthan High Court, while acknowledging the importance of DNA evidence in corroborating the complainant’s version, held that although a court cannot force an adult to submit to a blood test due to the invasive nature of such a procedure, the refusal to do so could be treated as a relevant circumstance and be used as corroborative evidence against the accused. The court balanced the interests of justice and personal liberty, noting that the accused has the choice to either submit to or refuse the test, but such refusal could have evidentiary implications.

In *Neeraj Sharma v. State of Uttar Pradesh*, the Allahabad High Court upheld a Magistrate’s direction under Section 53 of the Code of Criminal Procedure for the collection of hair samples of the accused despite his objections. The Court ruled that hair, blood, and fingerprints by

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<sup>31</sup> 1981 CriLJ 125 (Bom)

<sup>32</sup> 1991 CriLJ 939, 1990 (2) WLN 110, Available at <http://indiankanoon.org/doc/1147672/>

themselves do not have any incriminatory value unless compared with existing samples and found to match. Therefore, giving such samples does not constitute being a witness against oneself under Article 20(3).

Likewise, in *H.M. Prakash alias Dali v. State of Karnataka*, the Karnataka High Court rejected the argument that compelling an accused to provide a blood sample for DNA testing violated Article 20(3). The Court reaffirmed that the giving of physical evidence like blood or fingerprints does not fall within the scope of “testimonial compulsion” as defined in *Kathi Kalu Oghad*. It stressed that such evidence does not involve imparting knowledge or voluntary communication and thus does not attract the constitutional protection against self-incrimination.

In a similar judgment, the *Orissa High Court in Thongorani alias K. Damayanti v. State of Orissa* upheld the legality of ordering a blood sample for DNA testing. The Court stated that such procedures do not infringe the right under Article 20(3) as they do not amount to being a witness in the testimonial sense. The Court also emphasized the necessity of balancing individual rights with the public interest in effective investigation and prosecution of crimes. It noted that while bodily integrity under Article 21 is a crucial consideration, the State may override such rights for compelling public interest, provided the procedure is fair and justified.

The Supreme Court further clarified the position in *Smt. Selvi & Ors v. State of Karnataka* (*AIR* 2010 SC 1974)<sup>33</sup>, a landmark case that considered the constitutional validity of scientific techniques like narco-analysis, polygraph tests, and brain-mapping. While the Court struck down the involuntary administration of these tests on the ground that they involve testimonial compulsion and violate Article 20(3), it upheld the admissibility of DNA profiling.

It observed that DNA profiling, unlike the above techniques, is based on material evidence and does not involve the communication of personal knowledge by the accused. The Court also referred to the 2005 amendment to Sections 53, 53-A, and 54 of the CrPC, which expressly recognized the medical examination of accused persons and included DNA profiling within its scope. The judgment distinguished between obtaining a DNA sample (a bodily substance) and a DNA profile (a record created from the sample) and noted that while DNA profiles are useful

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<sup>33</sup> 2010) 7 SCC 263

for identifying suspects, their use in testimonial contexts may raise new legal concerns in the future.

## **THE DNA TECHNOLOGY (USE AND APPLICATION)**

### **REGULATION BILL, 2019**

In spite of all these provisions under the BNSS, BSA, and Prevention of Terrorism Act, 2002, the most significant legislative attempt to address the regulatory gap in the DNA technology landscape in India was the DNA Technology (Use and Application) Regulation Bill, 2019. The Bill was introduced in the Lok Sabha on 8th July 2019, which is almost identical to its precursor of 2018. It was a legislative response to address concerns that arose due to the report presented by the Law Commission of India in its Report No. 271 on Human DNA Profiling, 2017. In its report, it was stated that it had “categorically identified that there is a lack of any dedicated institutional or statutory mechanism in our country to ensure the regulated use and storage of DNA data.”

The main structural goals of the Bill were to set up a National DNA Data Bank and Regional DNA Data Banks, to maintain separate indices for crime scene profiles, suspects and undertrials, convicted offenders, missing persons, and unknown deceased individuals, restricted to forensic and identification purposes. The Bill also envisages the creation of a DNA Regulatory Board to monitor accreditation, quality standards, and to develop recommendations on privacy and data security. The accreditation of DNA labs was also a mandatory feature of the Bill to prevent unreliable forensic evidence, which at times has threatened to negate the credibility of scientific evidence in Indian criminal jurisprudence.

Another particularly significant and nuanced feature of the Bill was its approach to the concept of consent under Clauses 21 and 22. Contrary to the blanket exception provided in the case of all criminal offenses, the Bill drew a distinction in the gravity of the offenses and mandated the requirement of written consent in the case of the collection of DNA samples from individuals arrested for offenses carrying a jail term of up to seven years. In the case of offenses carrying a jail term exceeding seven years or the death penalty, however, no such requirement was applicable. In the case of victims, relatives of missing individuals, minors, and individuals with disabilities, the requirement of consent remained applicable in all cases, with the Magistrate possessing overriding powers in specific cases. This approach to the concept of consent was a particularly nuanced attempt to balance the requirements of investigation with

the right to privacy and bodily integrity under Article 21, in consonance with the Supreme Court's caution in *Bhabani Prasad Jena v. Convenor Secretary, Orissa State Commission for Women* (2010) 8 SCC 633.

It should, however, be noted that the Bill was not without its criticisms. There were concerns expressed by civil society organizations, legal experts, as well as parliamentary committees on the lack of sunset clauses on data retention, the scope of law enforcement access to DNA databases, as well as the potential of function creep. The concerns thus demonstrate the fact that the existence of robust privacy protections is no guarantee of the effectiveness of the protections, with the new DNA legislation having to address the inherent structural issues.

The Bill was eventually withdrawn by the Government on the 24th of July 2023. The rationale for withdrawal was the fact that some of the key provisions of the Bill relating to the collection of biological material and identification data were already subsumed under the umbrella of the Criminal Procedure Identification Act of 2022. While the 2022 Act partially fills the vacuum with regard to the regulation of matters relating to collection, it is by no means an equivalent to the comprehensive architecture of the Bill. In other words, India continues to remain without a comprehensive DNA regulation statute. Instead, it is left to the fractured regime of the BNSS, the BSA, the Prevention of Terrorism Act of 2002, and the Criminal Procedure Identification Act of 2022. As has been argued by this paper, the legislative regime is wanting with regard to the concomitant demands of forensic justice, data privacy, and the ethical regulation of DNA technology.