

# The Role and Importance of DNA Evidence in the Indian Criminal Justice System

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## Abstract

With the development of science and technology in the legal field, forensic science has contributed vastly to ensure that justice is administered to those who are affected. DNA Evidence has played an important role in the criminal justice system over the recent years. DNA findings have often helped to determine the culprits of several cold cases where sufficient traditional evidences were not present. Such evidences aid criminal investigations and helps to establish a link between the crime and the perpetrators. Hence, DNA evidence is crucial to protect victim's rights and solve grave crimes like murder, rape, sexual assault etc. Further, DNA evidence is also utilised to exonerate accused persons in crimes and for the identification of victims in crimes where the body is severally damaged.

This article aims to understand DNA evidence, its importance in ensuring Justice and the various legal challenges involved in introducing such evidence before court. The research aims to also determine the need to develop and amend criminal legislation to include DNA evidence and the need of a DNA database to ensure immediate identification of criminals.

**Keywords:** DNA, Evidence, Forensic Science, DNA Profiling, Crime, Code of Criminal Procedure, Constitution, Indian Evidence Act.

## Introduction

Previously, courts relied upon traditional forms of evidence collected from the crime scene or presented before the court. Such evidences are linked with accused persons and accordingly they are convicted, upon further investigation. In most situations this method has proven to be effective. Although, this has also led to the conviction of innocent persons, in certain cases where the alibi of the accused is against his/her favour and several criminals are even released due to lack of sufficient evidence. Hence, there is a need to acquire an efficient system to ensure that the actual offenders are punished for the crime committed by them and for the protection of the

society from harm.<sup>1</sup> Further, this may also help for the exoneration of innocent persons who have been wrongfully convicted for the crime.

Forensic Evidences play an important role in such circumstances. These evidences tend to be highly accurate and often helps to identify the culprits through the evidence left by him/her. DNA or Deoxyribonucleic Acid is a unique biological blueprint present in human beings. This component is present within all cells of the human body and can be used to identify a person. Two individuals cannot have the same DNA with the exception of identical twins. In criminal investigations, DNA is collected from any cell, hair strands, blood, tissues,

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semen or bodily fluids unintentionally left behind by the perpetrators of the crime at the scenes of crime and they are identified through a process known as DNA profiling. With such developments, criminal investigations have recently leaned upon DNA evidences acquired from the crime scene to connect the offenders to the crime. Forensic data has even been used to solve several crimes in countries like USA and UK. However, the application of this data has raised issues on the human rights of the accused against self-incrimination and the right to privacy. This often raises conflict as to whether the evidentiary value of such DNA evidences is significant so as to hamper the basic rights provided by the constitution.

### Research Methodology

Doctrinal methodology is utilized in the research article and the data is collected using Secondary sources. The data is collected and examined by using journals, papers, online sources and research articles. The sources have helped to identify the importance of DNA Evidence and its role in the strengthening of the Indian Criminal Justice system.

Research tools used in the article include:

1. **Research Papers and Journals** related to the importance of DNA Evidence in the Indian Criminal Justice System.
2. **Published Articles** discussing growth of forensic science and the use of DNA Evidence by judiciary and enforcement agencies.
3. **Online resources** analysing the development of DNA technology and its role in identifying perpetrators in several landmark cases.

### Discussion

#### Understanding DNA Evidence

DNA Evidence has played a crucial role in criminal investigations over the years. It can be collected through any body cell which is accidentally left behind at the crime scene. Upon inspection, forensic experts are required to examine and collect evidence, isolate the DNA and conduct DNA profiling analysis to identify the perpetrator of the crime. Such evidences are extremely precise and can be used to prove the involvement of an accused in the crime or the innocence of convicted persons who maybe thereafter acquitted.

DNA evidences are mainly used for identification of convicts in murder or sexual assault cases. In sexual assault/rape cases, the semen samples collected from the victim's body can be examined and matched with that of accused persons to determine whether they had committed the crime or not<sup>2</sup>, as observed in the *Priyadarshini Mattoo case*<sup>3</sup>. It can be also used to identify victims/accused through mutilated parts as observed in the *Rajiv Gandhi assassination, 1992*<sup>4</sup> as the bodies were severely damaged in the explosion and the bodies of both the prime minister and the culprit was identified by the examination of DNA.

DNA Evidence is also used to identify the paternity/maternity of a child. As stated, DNA is a unique make up of a person which is inherited from one's parents. Hence, it can be used to show the relation between a parent and child. In the *Gautama Khaddu v. State of West Bengal*<sup>5</sup> involved a paternity dispute with regards to payment of maintenance under Section 125 of CrPC.

DNA Evidence can be used for general identification of criminals who have committed an offense. These evidences can also determine whether the accused person has committed or has taken part in the commission of the crime. It is conducted by matching the sample obtained from the crime scene and another sample from the accused person. DNA proofs are also used to establish relations between family members for immigration purposes to show the relationship between the sponsor and the beneficiary.

The first application of DNA Profiling was observed in the case of *Colin Pitchfork*<sup>6</sup> at Leicestershire. In 1983 and 1986, two women were sexually assaulted and thereafter murdered. Sir Alec Jeffreys, the developer of the DNA profiling technique was asked to conduct a DNA profiling analysis of the samples found from the bodies of the victims, based on the suspicion that both the murders were conducted in a similar manner. Upon examination of the semen samples obtained from the victim's bodies, it was observed to be identical, indicating that one person had conducted both the murders. Further, the results concluded that the main suspect, Richard Buckland was not the murderer in this case. He was eventually exonerated and become the first person to be released upon DNA evidence. Subsequently,

all person who lived in the certain area was asked to provide samples for testing which resulted in vain even after examining 5000 samples. Afterwards, a woman reported a conversation she overheard where a man had stated that he had provided a sample on behalf of his friend, Colin Pitchfork. Upon testing his sample, Colin Pitchfork was found to be a match with the evidence collected from the victim's bodies and was eventually convicted for murder of both women.

### Limitations of DNA Evidence

DNA Evidence can only be used to establish whether the accused person was present or involved in the crime and does not indicate the *mens rea* of the culprit. However, it aids investigation by eliminating possible suspects especially with the advancements in the commission of crime. Further, DNA data obtained from low quality samples or those damaged by mishandling, exposure to biological factors often tends to be contaminated and cannot be relied to provide accurate results.<sup>7</sup> This is an important aspect of DNA profiling as the samples provided must be preserved carefully without contamination from the crime scene.

DNA evidences can also not be used solely for the conviction of an accused person as it might be accidentally left behind before the duration of crime. Hence, it is important to corroborate such evidences with already existing traditional evidences to prove that the accused had not taken part in the commission of crime. Bone-marrow transplantation is another hurdle for DNA Evidence as the procedure is likely to showcase variation in the DNA of the person being examined.<sup>8</sup>

### Legal implications and challenges of DNA Evidence

A main question that arises while studying DNA evidence, is whether accused persons can be forced/pressured to provide samples for DNA examination as it violates their Right to Privacy provided under Article 21 and the Right against Self-incrimination under Article 20(3). These Articles fall within the basic rights of an individual and even accused persons have the right to invoke the same. Under Article 20(3), no person can be compelled to be a witness against himself. This is to ensure that forced and involuntary confessions are not made before the court. The Supreme Court held in *Ramalal Bhogilal Shah v.*

*V.K. Guha*<sup>9</sup> that Article 20(3) provides protection against the person being compelled to be a witness against himself, but if a DNA Test is required, it can be performed under the order and supervision of the Court. In *State of Bombay v. Khathikalu Oghad*<sup>10</sup>, it was held that providing samples or conducting medical examination does not fall within the purview of being a witness against oneself. This was also reflected in *Selvi v. State of Karnataka*<sup>11</sup>, where the court held that DNA testing can be used as a vital tool to link accused persons to the criminal acts and hence, it does not violate the constitutional provision given under Article 20(3).

The Right to privacy under Article 21 states that no person can be deprived of his Right to life and personal liberty except in accordance with procedures established by law. In the landmark case of *Menaka Gandhi v. Union of India*<sup>12</sup>, the Supreme Court held that Article 21 can be overlooked in two instances if there is a valid law or if there is a procedure which is just, reasonable and established by law. It was also held to not be an absolute right.<sup>13</sup>

Therefore, the main issue is whether DNA Evidences hold high evidentiary value so as to overlook the basic rights provided to the accused under the constitution. Here the basic ideology behind the Criminal justice system plays an important role i.e., to ensure that the guilty are punished, the innocent are set free and justice is administered to the affected. In serious crimes such as rape, murder etc. the victim may be the only witness or due to fear caused by coercion or threats by culprits<sup>14</sup>, witnesses may conduct false testimonies or choose not reveal to the truth. In such situations, it is critical that accurate evidences can be provided to protect the interest of the affected parties.<sup>15</sup> This issue was discussed in the case of *Thongorani Alias K. Damayanti v. State of Orissa and Ors.*<sup>16</sup> and it was held by the Orissa High Court that before passing an order to conducting DNA testing, the court must balance the public interest and the right of the accused provided under Article 20(3) and Article 21 under the Constitution. The court must also consider the gravity of the offence, extend of role played by the accused in commission of crime, the age as well as health of the accused and confirm if any other evidence is available to show the presence or absence of the accused in the commission of crime.

The court should evaluate the reasons due to which the accused has refused to provide consent to such DNA Testing. Hence, such rights can be overlooked provided the balance between the rights of the accused and interest of the society is established.

DNA evidences are not specifically discussed under the Indian Evidence Act, 1872. Section 45 deals with expert evidence which can be relied upon to identify and determine evidences requiring professional expertise. Section 112 discusses the legitimacy of children in situations where no relation between the husband and wife can be established. This was observed in *Kamti Devi v. Poshiram*.<sup>17</sup> Another landmark judgement was given in the *N.D. Tiwari case*<sup>18</sup>, where a young man claimed to be the son of N.D. Tiwari and sought the court's help prove the paternity. The politician was asked to undergo DNA testing by order of the court, but he rejected stating that it would be in violation of his privacy and would also cause public humiliation. The Supreme Court held that the results will be not be revealed to the public and will be only used to show the paternity of the young man as he has the right to obtain justice and ordered the test to be conducted. The result eventually concluded that the man was in fact the son of N.D. Tiwari.<sup>19</sup>

Under CrPC, Section 125 deals with the maintenance of wives and children and DNA evidences can be utilised to show legitimacy of children. Section 53 deals with the examination of accused person by medical practitioner upon request of police officer to obtain evidence which may be critical towards ascertaining facts which are vital to the investigation of the offence. Section 53A discusses the examination of accused person in case of rape. Section 54 deals with the examination of accused person upon the request of the accused himself so as to provide evidence which may help to disprove the commission of crime by him. Therefore, DNA evidences are crucial to the Criminal Justice system in India and new technological advancements may further contribute to create an ideal system.

### **Need for legal reforms and amendments to incorporate DNA Evidence**

DNA evidence is proven to be vital in criminal investigations and hence, it is necessary to conduct

proper procedure to ensure that the evidences are collected safely without any damage. Quality control must be practiced to ensure accurate and efficient results are provided. In several cases, contaminated or mishandled evidences caused valuable and contributory proof to be useless. Hence, it is necessary that the collection and examination of DNA evidences are conducted by those having forensic expertise. Evidences must be safely stored so as to avoid any tampering or error in result. Therefore, there is a need of proper legislation to govern the same.<sup>20</sup> Forensic experts are expected to act without any bias and conduct fair examination of DNA evidence put forth before them<sup>21</sup>. Hence, in case of any negligence it may contribute to loss of significant evidence which may prove the guilt or innocence of accused persons. This further supports the need of proper regulation to ensure protection of such evidences. The Malimath Committee Report, has also suggested the addition of DNA expert within the CrPC relating to medical examination of the accused.<sup>22</sup>

The DNA technology (Use and Application) Regulation Bill, 2019 was introduced in 2019 to regulate the use of DNA technologies which have been utilised for identification of individuals. The Bill further specifies the use of DNA testing for offences under the IPC and paternity cases in civil courts. The bill further discusses the procedure which is to be established for the purpose of collecting DNA evidence from the accused persons including consent of victim and accused. The bill also suggests the idea of establishing DNA data bank in both regional and National level with data provided from DNA laboratories. It also aims to establish a regulatory board to oversee the functioning of DNA labs and the activities of the DNA data bank. The bill also discusses the duties of DNA laboratories and term of punishment for unauthorised distribution of private DNA data.<sup>23</sup>

In several countries like USA and UK, DNA Evidences are put forth in criminal investigations and have accordingly supported science and technological advancements in the criminal justice system. Further, they have established DNA data Bank which are utilised with at most care to regulate crime rate by preventing grave offenders from reoffending and increasing the rate of recidivism. This also ensures

that the society is protected by creating fear in the mind of offenders through the DNA data collected and reconviction. However, India is still behind to apply such developments to criminal investigation. With the rising pendency of cases, it is equally important to solve cases without delay to the affected parties for justice to be insured. Like the saying Justice delayed is Justice denied, it is required for the Indian Criminal system to adopt new technological development to identify those guilty of committing the crime and release those found to be innocent.<sup>24</sup>

### Conclusion

DNA Evidence is observed to be highly accurate and can therefore, be used effectively in the criminal justice system. The ability to identify evidential data through DNA collected from cells, tissue, semen bodily fluids has proven to be substantial in ensuring guilty persons are punished and wrongfully convicted individuals are exonerated. With the absence of constitutional hurdles, such evidences prove to be critical in understanding the circumstance of the crime. Hence, DNA evidence safeguards not only the rights of the victims but also of those who are innocent. DNA findings can be used efficiently with other traditional evidences to understand the crime and identify the person responsible. To ensure that the evidences are examined with at most care it is necessary to be collected, preserved, processed and examined by a forensic expert having sufficient and accurate knowledge required for the same. It is also required to conduct amendments of CrPC and the Indian Evidence Act to include acknowledge technological advancements in forensic science to establish an ideal criminal justice system in India. Further, it is necessary to develop legislation to deal with the collection, preservation, examination, use and application of DNA evidences. It is also necessary to establish DNA banks in our country to ensure protection of the society from reoffenders. Hence, DNA play a vital role in the administration of justice and it must be used efficiently to create an ideal criminal justice system in India.

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