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**DNA PROFILING AND EVIDENTIARY VALUE IN INDIAN LEGAL SYSTEM**- Gaurav Charaya<sup>1</sup>**DNA PROFILING**

A DNA test, also known as "DNA Profiling" after its popular name, is a method in which a dna sample is processed through an assay in a laboratory to analyse data about it. The assay looks for specific DNA sequences that could find the source of the sample or serve as a basis to compare among two samples. This method is used all throughout the world for a wide variety of reasons, ranging from the administration of justice to the provision of medical care. In the year 1984, Sir Alec Jeffrey, working at the University of Leicester in England, was the first person to publicly report on the technique of DNA testing. Not long after this event, it rapidly rose through the ranks to become one of the most significant technologies in the field of forensic science. The phrase "DNA Fingerprint" held the idea of absolute identification when it was used in the papers that Jeffery and his colleagues produced in the year 1985. In 1985, forensic DNA typing was used for the first time in a casework setting in the United Kingdom. In the late 1980s, forensic DNA typing was introduced in the United States by Commercial Laboratories, and in 1988, the Federal Bureau of Investigation followed suit. Forensic DNA typing is now used in a variety of cases relating to crimes, divorce, adultery, and other similar topics. When it comes to personal identification, ridge counts aren't nearly as important as the finer details of fingerprint patterns in forensic applications.

The standard for determining whether or not a scientific method should be admitted into evidence that was outlined in Fyre v. United States has been the one that has been cited in

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American case law the most often. However, in actuality, the court is far more engaged in the application of the legislation that was elucidated in the Fyre case. The court is responsible for determining a variety of variables, one of which is the legitimacy of the evidence, among other things. Its application has differed from instance to instance in the United States, but the concept that was developed in the Fyre's case quickly proved fairly useful in solving numerous situations pertaining to a variety of concerns with the assistance of DNA technology.

Because each person's Deoxyribonucleic Acid (DNA) sequence is one of a kind, DNA may be used as a reliable method for individual verification. The term "Short Tandem Repeats" (STR) refers to parts of DNA that are repeated, and these sections vary across people. An individual's DNA profile may be established by doing an analysis of the amount of short tandem repeats (STRs) that are located at various sites in their genetic code. The most important contribution that DNA evidence has made to criminal investigations throughout the globe is that it has helped solve more cases. The most prevalent method used in the course of criminal investigations is the pairing of DNA profiles. This is done by comparing a DNA profile produced from a specimen taken from a scene of the crime with one acquired from a database or suspect.<sup>2</sup>“The DNA profiling technique involves a lengthy procedure which involves the following steps.

1. Extraction and purification of DNA from specimen.
2. Fragmentation of DNA using “restriction enzyme”.
3. Arranging the fragments on the basis of their length by agarose gel electrophoresis.
4. Transfer of separated fragments to nylon membrane by “Southern blotting”.
5. Hybridisation with a radioactive labelled probe.
6. Visualising the bands of DNA by autoradiography.”

### **LEGAL PROVISIONS UNDER WHICH DNA EVIDENCE WAS USED/REFERRED**

The legal aspect relating to collection of DNA is covered by different sections of the Code of Criminal Procedure, 1973 and the Constitution of India. There were cases where the court commented on the relevancy and legal aspects of DNA test and the situations in which it can

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<sup>2</sup> Marcus Smith, Monique Mann “Recent Developments in DNA Evidence” 11 *Australian Institute of Criminology* 56 (2015) available at : <http://www.aic.gov.au/publications/current%20series/tandi/501-520/tandi506.html>

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be conducted. The court discussed the admissibility of DNA profiling technique and held that that DNA profiling technique has been expressly included among various forms of medical examination in amended Explanation to Section 53 CrPC. DNA profile is different from a DNA sample which is usually obtained from bodily substances. Moreover, the court opined that “Conducting DNA profiling is not a violation of Fundamental Rights under Article 20(3) of the Constitution of India and 161(2) of CrPC<sup>5</sup>. In another case the court gave an explanation when a DNA **test** was required to identify the dead body, although the test was not required to identify the dead body in this case<sup>6</sup>.

The types of cases and legislations in which DNA evidence played a significant role in solving the crime:

**The Indian Penal Code, 1860:** murder, rape or murder with rape, dacoity, kidnapping, abduction, etc.

**The Arms Act, 1959:** Section 25-Punishment for certain offences, Section 27-Punishment for using arms, etc. Section 35 – Criminal responsibility of persons in occupation of premises in certain cases.

**The Narcotic Drugs and Psychotropic Substances Act, 1985:** Section 50 – Conditions under which search of persons shall be conducted.

**The Scheduled Castes And The Scheduled Tribes (Prevention of Atrocities) Act, 1989:** Section 3 – Punishment for offences of atrocities .

**The Medical Termination of Pregnancy Act, 1971:** Section – When pregnancies may be terminated by registered medical practitioners.

**The Code of Criminal Procedure, 1973:** Section 53 – Examination of accused by medical practitioner at the request of police officer, Section 53A – Examination of person accused of rape by medical practitioner, Section 54 – Examination of arrested person by medical officer, Section 125 – Order for maintenance of wives, children and parents, Section 482 – Saving of inherent power of High Court.

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**The Indian Evidence Act, 1872:** Section 112 – Birth during marriage, conclusive proof of legitimacy, Section 114 – Court may presume existence of certain facts.

**The Constitution of India:** Article 20(3) – No person accused of any offence shall be compelled to be a witness against himself, Article 21 – Protection of life and the personal liberty, Article 32 – Remedies for enforcement of rights conferred by Part III, Article 226 – Power of High Courts to issue certain writs, Article 227 – Power of Superintendence over all courts by the High Court.

DNA testing always results in 100% accuracy and may be used in court. In order for the DNA evidence that has been presented to the court to be considered admissible, it must first be collected, preserved, and documented in an accurate and appropriate manner. This must be done in order to convince the court that the evidence that has been presented to it is credible. There is no specific legislation in India that can provide specific guidelines to the investigating agencies and the court, as well as the procedure that should be adopted in the cases involving DNA as its evidence. This is because India does not have any specific legislation that addresses this issue. In addition, the Indian Evidence Act of 1872 and the Code of Criminal Procedure of 1973 do not have any provisions that are specifically designed to address concerns pertaining to science, technology, and forensic science. Because this provision does not exist, an investigating officer must go through a great deal of difficulty in order to acquire evidence that requires the use of contemporary mechanisms in order to demonstrate that the accused person is guilty. A law enforcement officer is permitted, according to Section 53 of the Code of Criminal Procedure of 1973, to seek the aid of a medical practitioner in good faith for the purpose of an investigation. However, it does not make it possible for a complainant to gather evidence such as blood, semen, or other bodily fluids in order to pursue criminal charges against the accused. Two new sections have been added to the Criminal Procedure Code as a result of the Criminal Procedure (Amendment) Act, 2005. These sections give the investigating officer the authority to collect DNA samples from the bodies of both the suspect and the victim with the assistance of a medical practitioner. Both of these clauses make it possible for a medical practitioner to examine a person who is accused of rape, and they make it possible for the victim of rape to be examined as well. In spite of this, the admissibility of

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this evidence has been left in a condition of uncertainty as a result of the opposing opinions expressed by the Supreme Court and several High Courts in their respective judgements. Judges do not dispute the scientific correctness and conclusiveness of DNA testing; yet, there are instances in which they do not allow this evidence on the grounds that it is prohibited by law or the constitution, and occasionally even public policy.

There are some provisions that are included in the Indian Evidence Act, 1872 such as Section 112 which determine child's paternity and indicates that a child born in a legitimate marriage among a mother and a man within 280 days after the dissolution of the marriage, and the mother being unmarried demonstrates that the kid belongs to the man, unless proven differently. However, there is no particular provision that would cover current scientific procedures. In the event of a legal dispute involving a child's paternity, the use of DNA testing to establish parentage is of the highest significance. The need for this evidence is of the utmost importance in the criminal cases, the civil cases, and the maintenance procedures in the criminal courts in accordance with Section 125 of the Criminal Procedure Code.

## ACCEPTANCE

In 1987, the process of introducing DNA testing into the court system got its first foothold. The progression of the legal acknowledgment of its legitimacy may be readily broken down into two distinct phases:

### Admissibility Unchallenged

This was the first stage of the process, which saw the introduction of DNA typing into the judicial system. During this time period, DNA evidence was accepted in the courts without any objections being raised. The DNA evidence that was presented by the prosecution was in no way refuted by the defence, nor was it called into question by the judges. The evidence obtained via the use of this technology was given an excessive amount of weight by the judges.

### Critical admissibility

During this stage, the DNA evidence was subjected to close inspection and analysis. The attorneys for the defence, with the assistance of scientific literature, levelled criticisms against

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the methodology and theory behind DNA identification. Several issues were brought to light by the defendants regarding the variable number tandem repeat-based restriction fragment length polymorphism study. Because of this, when it came to evaluating the DNA evidence, the courts used the greatest care and attention. Different judicial systems have developed their own criteria for assessing DNA evidence.

In spite of the fact that DNA profiling is a very reliable and scientific method, one of the most significant challenges in using it as evidence in legal proceedings is that it is quite complicated. The method calls for the completion of a complex sequence of scientific processes, a strategy that draws from a number of different fields of study, as well as varying degrees of trustworthiness and acceptability within the scientific community.

#### Admissibility of evidence related laws

When assessing the reliability of scientific DNA evidence, the courts in the United States adhere to three primary requirements, which are as follows:

1. "The general-acceptance" test
2. "Relevance" test and
3. The "Daubert" test"

The judicial system in Canada has embraced and begun to use these standards. The concept of "helpfulness" is being used as a criterion by English courts in their analysis of DNA evidence. The "prejudicial impact" test is an extra threshold that was established by the courts in Australia. It is known as the "prejudice effect." In accordance with this criterion, the courts will consider both the probative value of the scientific evidence and its potential to prejudice their decision-making.

#### **FRYE AND DAUBERT'S CASE**

Let us first comprehend the ratio of the judgement that was overruled by Daubert's Judgement before we go on to analysing the case that Daubert brought up. It was Fry's case James Alphonso Frye argued innocence to a charge of murder by petitioning the court to retain an expert and perform out a polygraph test, often known as the 'systolic blood pressure deception test' on him.

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This was Fry's case. In this particular instance, the question that needed to be answered was whether the evidence presented by an expert was to be accepted without qualification or if a rule need to be devised for its acceptance. The ruling that is now generally accepted was established by this court. It was stated that the view of the expert would be taken into consideration if it had received widespread approval from the scientific community. The court has ruled that the law must be safeguarded by giving precedence to scientific evidence that has previously been shown and acknowledged by the global scientific community. As a consequence of this decision, a benchmark for the admission of expert testimony was established. According to this standard, the testimony of an expert that is premised on any scientific hypothesis shall be appealable in the court of law if the scientific principle on which it is based is generally accepted in the field to which it belongs. This standard was developed by the American National Standards Institute. However, the Frye judgement did not adequately define what was meant by "wide acceptance," and as a result, various courts construed the ruling according to how they understood it. In spite of a great deal of criticism from a broad variety of community members, the judgement of Frye was largely applied in the court.<sup>3</sup>

In 1975, the Congress of the United States passed a law that established the Federal Rule of Evidence. Rule No. 702 addressed the issue of whether or not expert evidence might be admitted. Any litigant who desires to have an expert witness testify on his behalf must provide such a witness who meets the requisite knowledge, training, and education standards established by this rule in order to be admissible as an expert witness. This ruling explained the parameters within which scientific evidence might be presented in legal proceedings. The following two decades were governed by this norm up to the time when Daubert's ruling was implemented.

### **Daubert**

This case<sup>4</sup> is a significant one because it established the criteria for the acceptance of evidence provided by experts in a court case held in the Federal Court of the United States. In this instance, the plaintiff had initiated legal action against the pharmaceutical corporation that was

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<sup>3</sup> Bobak Razavi, J D, Admissible Expert Testimony and Summary Judgement, The Journal of Legal Medicine, 29:307-343, 2008 Taylor & Francis Group

<sup>4</sup> Daubert v. Merrell Dow Pharmaceuticals, Inc 509 US 579 (1993)

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responsible for the production of the medicine known as Bendectine. Because the plaintiff's wife used this medication when she was pregnant, both of the children who were born to him and his wife were born with a birth defect. The evidence of an expert who said that there was no danger associated with using this medication on human beings was the deciding factor in this case, which resulted in the defendant being found not guilty. The plaintiff, on the other hand, provided affidavits to show that the drug in question was responsible for birth deformities in the animals. The ruling of the court was founded on the following opinion, which states: Whenever a professional testifies in the court, the judge is required to make a preliminary assessment as to whether or not the technique that the expert is basing their evidence on is scientifically sound or not. Also, if the explanation or approach that was employed by the expert may be applied to the fact that is now under question. In this decision, the court established certain broad guidelines for the admission of expert evidence, which are presented as follows:

- “Whether the scientific method used can be effectively tested;
- Whether the scientific theory involved is subjected to peer review of the scientific community and whether it has been published thereafter;
- Is every scientific technique accepted by the community, the court should know the rate of error involved?<sup>5</sup>”

According to the decision that was reached in the case of Daubert, the trial judges were known to as the "gatekeeper" who guaranteed that the expert's opinion that was involved in any case was credible and pertinent. The new criterion stated that in order for the scientific evidence to be considered trustworthy by the courts, it had to first be shown that it adhered to reasonable standards and then be recognised by the scientific community.

Based on the general acceptance rule, Frye's ruling served as the threshold for when scientific evidence might be admitted into the courts from 1923 until 1993. After that, in 1975, the Federal Rules came into effect, broadening the scope of what might be considered admissible scientific

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<sup>5</sup> The Florida Senate, Analysis of Law relating to Admissibility of Expert Testimony and Scientific Evidence, October 2008,2009-331 The Florida Senate, Analysis of Law relating to Admissibility of Expert Testimony and Scientific Evidence, October 2008,2009-331

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evidence. After the Daubert decision was handed down in 1993, new guidelines and criteria were established to determine how scientific evidence should be accepted.

The reliability of the expert's testimony in the Indian Scenario In accordance with section 45 of the Indian Evidence Act of 1872, scientific evidence is recognised as being both important and acceptable in the Indian legal system.

In accordance with Section 45 of the Indian Evidence Act of 1872, the testimony of an expert may be presented in court as part of the evidence presented there. On the other hand, the written opinion or report of an expert is seen as insufficient proof since it is not dependable. It has been remarked that it is unwise to build a conviction just on the written opinion of an expert, unless that view can be supported by independent evidence.<sup>6</sup>

Witnesses are referred to be the "eyes and ears" of the judicial system in Bentham's theory. The court places a great deal of weight on the evidence of an eye witness whenever such witness provides their version of the facts related to a crime that they personally saw. However, the reliability of such testimony must be determined after thorough consideration and analysis by an impartial third party. In the event when the medical evidence (the judgement of the expert) contradicts the ocular evidence that was provided by a witness, the court would be making a mistake if it chose to place more weight on the medical evidence and disregard the statements made by eye witnesses.<sup>7</sup>

In case an opinion is given on a fact by two different experts and both their opinions vary from each other, the court may not qualify their opinion as conclusive expert opinion and shall not rely on them.<sup>8</sup>

In *Baso Prasad &ors v. State of Bihar*<sup>9</sup>, the Honourable Supreme Court made the observation that the findings and conclusions of experts are important facts. The court could take the view of the expert into consideration since it is credible, relevant, and admissible. It is up to the court to determine whether or not to consider the opinions of specialists to be credible, and if there is a

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<sup>6</sup> M Durga Prasad, Spl Assistant, Syndicate Bank and etc v. The State of AP and etc. [2004 CrLJ 242]

<sup>7</sup> State of UP v. Hari Chand 2009 CrLJ 3039

<sup>8</sup> Sidharth Vashist@ Manu Sharma v. State (NCT of Delhi)

<sup>9</sup> AIR 2007 Supreme Court 1019

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disagreement between those opinions and the facts that can be seen with the naked eye, the court must decide who to believe. An expert may have a background in medicine or ballistics, for example. However, a medical officer cannot be classified as a ballistics specialist, and because of this, he is not required to provide a response to the question of whether or not an inquiry was caused by a bullet. Because he is not a ballistics specialist, we cannot put any stock in his judgement if he offers a prediction about the damage that will be inflicted by a bullet.<sup>10</sup>

A specialist in legal matters cannot serve as a witness to facts. The nature of his contribution, which is advising in nature, is that he shares his viewpoint about the matter at hand. The court will give credence to such an opinion if it is dependent on arguments in support of his rationale.<sup>11</sup>

In light of what has been discussed so far, it is possible to argue that the testimony of an expert is not an important piece of evidence. It has not been deemed to be conclusive by the courts. It is possible that it has no value in the eyes of the law if there is no independent and credible confirmation. The opinion of an expert is no longer considered the opinion of the expert after the court has accepted it; rather, it is now considered the opinion of the court.

### **DNA FINGERPRINTING**

The scientific community is making tremendous strides forward. Over the course of time, technological advances have made their way into every sector of society. The traditional approaches to investigations are being phased out in favour of new procedures that are not only faster but also more sensitive and accurate. Criminals are taking use of technology advances in order to carry out their illegal activities. Because of the current state of affairs, it is necessary for anyone involved in the criminal justice system to be updated on the most recent discoveries in science and how those discoveries might be used to the investigation of crimes.

Every single person has qualities that are distinctive to just themselves. Even the structural components of each and every portion of the human body are not identical to one another. This distinctive quality is the foundation upon which the idea of personal identification is built. It is normal practise to make use of many technologies, like fingerprints, in order to comprehend the

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<sup>10</sup> Mahmood and anr v. State of UP AIR 2008 SC 515

<sup>11</sup> Ramesh Chandra Agrawal v. Regency Hospital Ltd & ors AIR 2010 SC 806

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distinctiveness of a person in order to discover his or her identification. In most cases, an offence cannot be performed without the help and assistance of the hands, which are considered to be the most important part of the body. It's possible for a criminal to have direct touch with evidence at the site of the crime while they are in the process of committing the crime. This leaves behind the finger imprints that may be used to assist identify the person who committed the crime.

### **FEATURES AND SIGNIFICANCE OF FINGERPRINTS**

The deposit of sweat and fat substance by the sweat glands in the friction skin of the hands, together with any dirt that happens to be on the finger tips, leads to the formation of fingerprints. Fingerprints may be used to identify an individual. The term "fingerprint" refers to the procreation of the ridge structure on the exterior of the outer or nail joint of the finger in any way, whether it be replicated in ink, in blood, or by the greasy material which is released by the sweat glands through the outlets, which are located in the summit or top of the ridges. Fingerprints can be reproduced in any of these mediums.

When compared to the skin that covers the rest of the body, the skin that covers the anterior surface of the human hand and the plantar surface of the foot has a noticeably distinct look. The ridges that may be seen on the side of the initial joint of a finger or thumb create a pattern or design that is known as a fingerprint. Ridges are the thin lines that make up the pattern or design, and the furrows are the gaps in between the ridges. The pattern or design is called a ridge and furrow pattern. The ridges provide the foundation for the study of fingerprints as a scientific discipline. The existence of ridges on an item makes it possible for a person to cling onto it. The properties of the ridge do not alter in any way during the course of a person's life and continue to exist even after the body has been destroyed. Scientists refer to the study of fingerprints as an accurate science because it has specific qualities that set it apart from other sciences.

#### Permanence

Ridges are regarded to be permanent aspects of the human body from the time of birth to the time of death of a person, or even after death, up until the time when the corpse is decomposed. If the ridges are impossible to destroy, then fingerprints are similarly impossible to destroy. Investigations into the topic have been carried out by a number of different scientists at various

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eras, and they have all arrived at the same result, which is that the basic pattern of the ridges does not alter throughout the course of a person's lifetime. When contemplating the issue of the ridges' long-term existence, it is important to take into account the impact of any infections, cuts, or other conditions that may be caused by physical work and have the potential to result in destruction. Ridges may be temporarily affected by skin disorders. When the illness has been successfully treated, the ridges will return to their usual state. In the event of cuts that leave lasting markings, the pattern's ridges will maintain their relative location even after the damage has been done. Therefore, it is plausible to assert that ridges are both permanent and everlasting.

### Immutability

The use of a thumb imprint may fulfil the function of a signature for everyone, regardless of their literacy level. Impression made by the thumb is an unchangeable signature that does not alter and it cannot alter under any situations.

### Variety

Fingerprints from two people, or even two fingers on the same person, are always unique. That's the basic idea of fingerprint science, and that's what sets it apart. As such, it is perhaps one of the best scientific means of establishing one's identity. Over time, several different systems for organising fingerprint data have emerged. One of the methods uses a combination of numbers, characters, and other symbols to denote various aspects of a pattern. The "Galton — Henry system" is the most popular approach in India and many other nations. By following the route the ridges take, it is possible to determine the shape that the ridges take. Pattern refers to the way in which the ridges move. Loops, arches, whorls, and composites are the four most common pattern types.

The ridges enter and exit the pattern from the same side in loops. The ridges of arches curve inward from one side to the other. Whorls have at least two deltas and one ridge that must recurve to create a full cycle around the centre. Composites share features with two or more pattern types.

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There are a minimum of three parameters that must be known in order to do a technical examination of fingerprints. Type lines, Cores, and Deltas are the three main types. The only goal of this categorization is to provide a system for filing fingerprint sets so that they may be identified quickly and early on. Using this method, government agencies may assign symbols to a person's perceptions based on the similarities they reveal. Those who have been convicted of a crime may be required by law to provide fingerprints. Inmates have their fingerprints taken and recorded on a card that also includes their name, conviction date, and other information. In the future, this will aid law enforcement in correlating observations made at the scene of a crime with other evidence gathered there.

### Utility

Fingerprints, in a nutshell, are visual depictions of the papillary ridges on the tips of people's fingers. The ridges come in a wide variety of forms and arrangements. They each have unique characteristics, and it would be impossible to create a carbon copy because of the multiplicity of these unique features. Thus, fingerprinting has developed into a reliable method of identification and an established science that provides a special benefit to law enforcement authorities all over the globe.

The important uses of finger impressions are:

- Legal papers in favour of a certain party may be authenticated.
- Fingerprint evidence from crime scenes may be used to identify perpetrators.
- Helping law enforcement identify repeat criminals via fingerprint comparisons already on file.
- For those in the armed forces or in jail, this includes keeping track of their personal identification information.
- Person-recognition techniques for use after a catastrophic event.
- Persons who have gone missing may be located.
- For situations involving abduction, determining the victim's identification is a top priority.
- Identifying bank forgeries

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- Procedures for acquiring licences to operate motor vehicles, bear guns, etc.,

### **ADMISSIBILITY OF FINGERPRINT EVIDENCE**

Fingerprint evidence is now allowed, however the witness must be a qualified expert in fingerprint analysis. According to Section 45 of the Indian Evidence Act, 1872, expert testimony is admissible when the court must make a determination on a matter of foreign law, arts, science, etc., including finger prints. Experts are a term used to describe people like this.

The term finger impression was added for the first time after the observation in the case of R v. Fakir, Md. In a ruling based on section 45 of the Indian Evidence Act of 1872, the court determined that a comparison of finger prints is a matter for the court alone to decide and that expert testimony is not admissible. Section 20B of the Code of Criminal Procedure, 1973, might be used as proof of the gradual rise in fingerprint admissibility. The Magistrate must be satisfied with any evidence presented to him or her by the prosecution. Fingerprint expert testimony is not admissible without Court confirmation. Only the procedures outlined in It is possible to raise reasonable doubt about the evidence of an expert witness by relying on section 155 of the Evidence Act. There is a provision in the Criminal Procedure Code known as section 293 that allows the report of the Director of the Finger-Print Bureau to be regarded as evidence without the Director having to be reexamined in any way. The court, on the other hand, has the authority to subpoena and question any director anytime it sees appropriate. The comparison and identification of fingerprints has now developed into a science, and the results derived from this science have reached the stage where they can be considered exact. This is the rationale behind the report of the Director of the Finger-Print Bureau is treated as evidence even though the Director himself was not examined as part of the investigation. It is possible to determine whether or not a fingerprint is that of the person to whom it claims to belong by comparing it to the one which is to be proven, even if the one that is to be confirmed has not been presented or proved for any other purpose, as per Section 73 of the Indian Evidence Act, 1872.

The State of Karnataka brought charges of rape, murder, and robbery against the accused in the case of B.A. Umesh v. State of Karnataka.<sup>12</sup> The case relied on circumstantial evidence to make

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<sup>12</sup>(2011) 3 S.C.C. 85, paras 74-78.

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its case. It was seen by the witness that the accused person entering the home of the dead person and then exiting the home while carrying various household items. The accused person's fingerprints were discovered on the handle of the almirah that was located inside of the dead person's home. It was determined that the accused should have been convicted. When the investigation into the case is still ongoing, the court ruled in the case *Giriraj Singh Gaghela v. State of Andhra Pradesh*<sup>13</sup> that the fingerprints of the accused can be taken by the police even when there was no permission of the Magistrate. This decision was made while the case was still being investigated.

### **FINGERPRINT EXPERT**

According to Section 45, the advice of a fingerprint expert is only considered significant when the court is required to base its decision on a finger imprint. In this scenario, the viewpoint of such an expert becomes a fact that is significant to the discussion. In addition to instances requiring a fingerprint expert, this part includes circumstances in which the court has to issue an opinion on a point of foreign law, science, or art. It also addresses cases in which the court needs to determine the identification of handwriting. It is important to note that the term "finger imprints" was not present before the year 1899. According to Section 51, anytime the opinion of any living person is relevant, the reasons on which such an opinion is founded also become important. This provision applies in situations when the opinion of the living person is relevant. An expert may also refresh his or her memory by referring to professional treatises in order to comply with the requirements of Section 159.

Due to a lack of appropriate knowledge and/or experience, judges are often unable to draw valid conclusions from the evidence presented in some technically complex cases, which gives expert witnesses an advantage in certain cases. Disputes that pertain to specific scientific or technical expertise are often the ones that call for the most apparent use of expert testimony. The primary goal of providing the court with one's professional opinion is to aid in the court's process of reaching a verdict. When the eye witnesses and other evidence presented by the prosecution are reliable, have credibility, and are compatible with the eye version offered by the eye witnesses,

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<sup>13</sup>2009 Cr.L.J. 1257, para 21.

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the court will be fully within its authority to disregard the expert opinion because such a report does not bind the court. In such a scenario, the court is required to do an in-depth analysis of the foundation, logic, methodology, and competence of the expert in order to determine which of the reports may be relied upon in an accurate manner.<sup>14</sup>

The validity of the arguments that support an expert's view, including that of a fingerprint expert, may be used in the same way that it can be used to evaluate the quality of the opinion of any other kind of expert. It is important to note that the evidence provided by a fingerprint expert does not constitute substantive evidence and may only be used to confirm certain pieces of substantive evidence that are already on record. Importantly, although in many situations, experts are questioned in court, this becomes highly crucial if the account of the Fingerprint expert is unclear and ambiguous, and the non-examination of him or her in such circumstances undoubtedly makes his or her judgement untrustworthy.<sup>15</sup>

Even if the Fingerprint expert's assessment is proven to be completely sound, it won't matter if the fingerprints were taken in an unorthodox way (which will be explained in the section that follows).<sup>16</sup>

It is not enough for the court to simply remark that it was tough to favour one of the reports from two experts (one presented by each party/side) but rather, the court has a heavy responsibility to investigate both experts and the fingerprints thoroughly.<sup>17</sup>

If no expert has been provided, the court may appoint one under Section 73; nevertheless, the court is required to base its decision on its own conclusions and not those of the expert.<sup>18</sup> Finally, it is reasonable to assume that the courts will give careful consideration to expert testimony, and a "expert" is only a "expert" if he or she uses established procedures to reach a result and provides enough justification for that decision.<sup>19</sup>

## **THE EVIDENTIARY VALUE OF FORENSIC FINGERPRINTS**

<sup>14</sup> Ranjit Singh Brahmajeet Singh Sharma v. State of Maharashtra, (2005) 5 SCC 294

<sup>15</sup> 3Manu Sharma v. State (NCT of Delhi), (2010) 6 SCC 1

<sup>16</sup> Chandran v. State of Kerala, 1991 Supp (1) SCC 39

<sup>17</sup> Public Prosecutor v. Virammal, AIR 1923 Mad 178

<sup>18</sup> State (Delhi Administration) V Pali Ram, (1979) 2 SCC 158

<sup>19</sup> Manu Sharma v. State (NCT of Delhi), (2010) 6 SCC 1, Para 178

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In this sense, a fingerprint refers to the pattern of ridges caused by friction that forms on the fingertips and leaves an imprint on anything it touches.

Due to their uniqueness and durability, fingerprints are invaluable as a kind of forensic evidence. Patterns, classifications, and the many recent developments in the area of Forensic Fingerprints are not covered here. Criminal Procedure (Identification) Act, 2022, Code of Criminal Procedure, 1973, and The Indian Evidence Act, 1972 are all referenced in this section as they pertain to forensic fingerprinting.

The Courts must give it due consideration since it is a crucial piece of evidence. Experts in fingerprint identification will inevitably be called upon to help the Court. There is a wealth of case law literature that supports the use of fingerprint evidence and emphasizes the significance of conducting thorough reviews of both the fingerprint expert and the fingerprints themselves. For example, in the case of **Bhaluka Behara and others v. State**<sup>20</sup>, Although forensic fingerprinting has been validated as a precise science, the quality of the Expert's analysis remains under scrutiny. It is also a well-established legal principle that "to be a witness" does not involve a person testifying against themselves by providing a thumbprint, footprint, palm print, finger print, or sample writing.<sup>21</sup> as under **Article 20(3) of The Constitution of India, 1950**. This position has been reiterated subsequently and further, even compelling an accused to give his/her fingerprints, by the Police, is out of the purview of **Article 20(3)**.

Under the latest **the Criminal Procedure (Identification) Act, 2022**, "fingerprints" are included in the term "measurement" which is mentioned **2(1)(b)** of the Act.

"measurement includes finger impressions, palm-print impressions, foot-print impression, photographs, iris and retina scan, physical, biological samples and their analysis, behavioral attributes including signatures, handwritings or any other examinations referred to in **section 53 or section 53 A of the Code of Criminal Procedure, 1973 (2 of 1974)**).

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<sup>20</sup> AIR 1957 Orissa 172

<sup>21</sup> 1The State of Bombay v. Kathi Kalu Oghad and Ors., AIR 1961 SC 1808

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The concepts of relevance and admissibility are the primary guidelines that the courts use when deciding whether or not to accept forensic evidence. Therefore, the same is true for scientific fingerprints as well as other types of prints. The value of forensic fingerprints as evidence is determined by considering them in light of these two fundamental tenets of fingerprint analysis.

To compare words or numbers written by a witness with words or numbers that are claimed to have been written by a witness, a court might order a witness to write any words or numbers the court deems necessary under Section 73 of the Indian Evidence Act, 1872. This section also applies to finger imprints, although with any appropriate adaptations that may be required.

In addition, with regard to fingerprint experts, the admissibility of their testimony is dealt with in the Indian Evidence Act, 1872, under Part I (Relevancy of Facts), particularly under "Opinions of Third Persons, When Relevant" under Chapter II (Of the Relevancy of Facts) Part I. The Indian Evidence Act, 1872 was passed in the year 1872. In this case, sections 45 and 51 are the provisions that are pertinent. In the first subsection of this part, the essential sections of the law that pertain to a fingerprint expert are reviewed. These laws are found in this Chapter.

**Section 293** of Cr. P.C. states as follows:

“1) Any document purporting to be a report under the hand of a Government scientific expert to whom this section applies, upon any matter or thing duly submitted to him for examination or analysis and report in the course of any proceeding under this code may be used as evidence in any inquiry, trial or other proceeding under this code.

2) The Court may, if it thinks fit, summon and examine any such expert as to the subject-matter of his report.

3) Where any such expert is summoned by a Court, and he is unable to attend personally, he may, unless the court has expressly directed him to appear personally, depute any responsible officer working with him to attend the court, if such officer is conversant with the facts of the case and can satisfactorily depose in court on his behalf.

4) This section applies to the following Government Scientific Experts, namely:-

a) Any Chemical Examiner or Assistant Chemical Examiner to Government.

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- b) The Chief Inspector of Explosives.
- c) The Director of the Finger Print Bureau.
- d) The Director, Haffkine Institute, Bombay.
- e) The Director of a Central Forensic Science Laboratory or a State / UT Forensic Science Laboratory.
- f) The Serologist to the Government.”

The court may order any person present in court to record his fingerprints so that the court may verify the fingerprints purported to have been created by such person to the fingerprints recorded by the person ordered to do so. In the hands of qualified fingerprint specialists, proof of a person's identity using fingerprints found at a crime scene is irrefutable. If the court needs an expert's help establishing the accused person's identification or verifying the accuracy of the Bureau's expert opinion, the expert will obtain a summons from the court.

#### **GUIDELINES ISSUED BY THE SUPREME COURT AND THE HIGH COURT IN RESPECT OF THE FINGERPRINTING**

- If a court wishes to compare fingerprints or handwriting, it must have the help of specialists since doing so without them is perilous business.
- It's impossible to tell the difference between the two fingerprints just by looking at them.<sup>20</sup>
- The taking of a finger imprint does not constitute a personal testimony, as has been repeatedly proved.
- If an expert's judgement is presented under Section 73 of the Evidence Act to compare handwriting or fingerprints, the Court will very certainly find this evidence to be persuasive.
- The victim's relatives might file a complaint with the Session Judge if they believe that the investigating team was incompetent or that correct process was not followed.

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Guidelines comparable to those given by the Karnataka and Madras High Courts concern the admissibility of fingerprint evidence. Only by strictly adhering to these rules will the fingerprint evidence be admissible in court.

### **CRITICAL ASPECT OF FINGERPRINT EVIDENCE IN INDIA**

There are certain limitations of fingerprints evidence in India:-

- The AFIS, or the Automated Fingerprint Identification System is useful as it is a computerized system for the fingerprint records, but this digitizing and the data mining hardware have not been available for the identification at all level for example police forces cannot use this technology.
- There is a high cost of digitization which is attached to the AFIS or the Automated Fingerprint Identification System and it is because of this drawback not many machines which could be installed at all the administrative level.
- The preservation of the fingerprints is also a big task. There may be chances of the fingerprint data effected if the handling or the preservation is not rightly restored by the investigating agencies.
- The fingerprints evidence cannot be heavily relied as there might be imitation of the fingerprint which can be done by the police officials or any other person in order to incriminate an innocent person in the crime. There might not be an exact copying of the fingerprint but the constructing of the fingerprint which might be done.
- Application of the fingerprints may be done by the way of fraud. This can be firstly explained through the civil matters likewise, when a person who obtains a pension need to produce a certificate and has to ink his fingerprint on the certificate as a matter of proof, that he is still alive. This can be misused by any relative of the person at the time of the death that by fraud, the fingerprints may be taken and as a result the relative can misuse the pension of the deceased.

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Similarly, such taking of the fingerprints by way of fraud is also possible in the criminal cases. For example- When an accused murder a person by the gun or knife, and after murdering he can place such instrument used (gun or knife) in the hand of the deceased or some other person for the purpose of leaving an impression of the fingerprints.

Therefore, it can be said that the whole crime scene has been "planted" or "plotted" by a person and the Court have to be very much cautious while incriminating a person for any offence which involves fingerprints as an evidence.

## RELEVANT CASES

### DNA Fingerprints:

#### 1. Hari Om @hero v. State of Uttar Pradesh

Citation: 2021 SCC ONLINE SC 2

Supreme Court acquit one death penalty convict and two life sentence convicts:

This case discusses the recording of evidence and their veracity in the given circumstances, especially the evidence recorded of the Child witnesses.

#### Brief Facts of the Case-

This case arises out of an incident that took place in the year 2008 in which Smt. NirdoshDevi aged 40, her niece Kumari Poonam aged 18, her Ashish aged 12 and, her nephew Anshul aged 10 were murdered.

There were six accused in this case, tried for committing offences punishable under "Sections 396, 412 of IPC and under Section 3(2)(v) of the SC/ST Act." They were also tried by the Trial Court for offences under "Section 25 of the Arms Act, 1959". In the trial Court, all the six were acquitted of all the charges except under Section 396 of the IPC. All the six preferred criminal appeals challenging their conviction and sentences before the High Court.

The Allahabad High Court affirmed the death sentence awarded to the accused Hari Om. Further, the conviction and life sentence of other two accused i.e., Sanjay @ Sonu, Saurabh @ Sanju was

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also affirmed. However, the three accused named Haseen Khan, Rijwan and Rafique @ Bhaiye, were acquitted.

This appeal was filed challenging the convictions and sentences mentioned above.

Judgment of the Case:

- The Supreme Court has consistently ruled that the testimony of a fingerprint expert is not admissible. It can, at most, be used to back up a few pieces of supporting evidence.
- According to the opinion expressed by the Supreme Court in the decision made in the case of Hukam Singh v. State of Rajasthan (1977), 2 SCC 99, regarding the situation of the fingerprints of the accused being found on a mirror, this scenario cannot be viewed as inevitably indicting the suspect in the commission of the murder. The existence of fingerprints on a mirror is not a factor that would inevitably lead to the conclusion that the accused must have been responsible for those four homicides.
- In cases where the prosecution relies on inferences drawn from circumstantial evidence, it is now well-established that all incriminating facts and circumstances must be established by strong and convincing evidence, and that the facts thus founded must be coherent with the guilt of the accused and must not be explainable on any other sensible theory than that of his guilt. In other words, it must be crystal clear that the accused individual committed the act and no one else. No conviction can stand if the evidence in a given case can be explained away in a way that does not contradict the defendant's innocence.
- Therefore, even if we grant that fingerprints taken from the deceased's home may be linked to the two accused, this cannot serve as the foundation for their guilt in the absence of any further evidence. Therefore, these accused should be given the benefit of the doubt.

### **DNA Profiling**

#### **1. Swami Premananda v. Inspector of Police (29.09.1995 MADHC) MANU/TN/1057/1995**

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Petitioner along with seven others were charge sheeted for offences punishable under sections **120(B), 302 read with 34, 376, 376(2)(c) read with 109, 201, 202 read with 114 and 506(ii) of IPC**. Hence this petition for bail was filed. Held, all particulars required under section 173(2) of CrPC, viz. statement of witnesses examined during course of investigation were produced except further statement of victim girl, DNA report and abortion certificate into court. However when petitioner approached Magistrate to provide copies of charge sheet and copies of documents Magistrate declined to grant copies and passed order stating that scientific reports are awaited after receipt of which only charge-sheet to be prepared and furnished to petitioner. Prosecution had examined 109 witnesses and there were statements recorded under section 164 of CrPC. medical evidence and DNA certificate. However keeping in view position of petitioner and status of victim and nature of evidence so collected, release of petitioner on bail would have an impact in tampering with material collected by investigating agency. Thus, release of petitioner was not conducive to fair trial. Hence the petition was dismissed.<sup>22</sup>

## 2. **State v. Nalini (1999) 5 SCC 253**

Former Prime Minister of India Rajiv Gandhi was killed in the middle of the night on May 21, 1991, when a human bomb was detonated near his home. In addition to him, 15 others, including 9 police officers, were killed and 43 were injured, some critically. Dhanu, an LTTE (Liberation Tigers of Tamil Eelam) activist, was killed when the belt bomb she was wearing went off, and Haribabu, a photographer and conspirator hired to document the scene, was also killed. The incident was a result of a conspiracy. Seven accused who were alive and were involved in the conspiracy including a woman were convicted under sections 302 read with section 120 B of IPC. Death sentence was awarded to 4 of the seven convicted accused (including the woman) were confirmed. Sentence of the remaining 3 convicts altered to life imprisonment. **DNA profiling** not only helped identify the victims, but it also helped identify the perpetrators, who were primarily identified by the DNA found on a belt found at the crime site that included small amounts of human flesh.<sup>23</sup>

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<sup>22</sup>*Swami Premananda v. Inspector of Police* (29.09.1995 MADHC) MANU/TN/1057/1995

<sup>23</sup>*State v. Nalini* (1999) 5 SCC 253

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### 3. **Chandradevi v. State of Tamil Nadu by Inspector of Police, C.B., C.I.D. (12.12.2002 – MADHC) MANU/TN/2335/2002**

The accused were convicted under sections **376 and 302 and 120B IPC**. A serious charge of rape of 13 girls was made. The potency of A-1 was tested and he was found to be normal and capable of having sexual intercourse. The **D.N.A. Test** revealed that he had fathered the terminated foetus of P.W.14. Further allegations were that since the deceased protested against this act of A-1, he was brutally murdered by A-1 and A-2. It was shown at trial that A-1 and A-2 had used a stick to inflict physical harm on the decedent, namely to the deceased's left upper limb and lower limb. When the victim, who had been freed, slumped on the ground, A-1 and A-2 kicked him many times in the back and chest. On A-1 and A-2's orders, the deceased was locked in the kudil and denied any sustenance. The victim died of starvation. It was established that A-1 and A-2 had acted violently in the past, and that they had planned to kill someone in the future. Both A-1 and A-2 had their convictions maintained, and their appeal was denied.<sup>24</sup>

### **CONCLUSION AND SUGGESTIONS**

The objective of the Criminal Justice System of India is not only to punish the wrongdoer or the perpetrator of the crime but also to prevent the occurrence of the crime. Such parameters can be fulfilled not only with the assistance of the Investigating Officers, police, courts, lawyers but when several techniques are given evidentiary value these, techniques which can be also termed as the scientific techniques like the Fingerprints in the elimination of the crime. Though, the use of scientific techniques like Fingerprints are not new, but reliability of these techniques depends upon the forensic experts.

The evidentiary value of Fingerprints is largely relied upon the very first instance at the crime spot and in the collection of such evidences and in most of the cases, the accused is being caught or the case is being solved by these evidences only.

The Criminal Justice System of India though have made certain changes but still there are some of the areas which need to be addressed so that there can be a proper use of the evidences like

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<sup>24</sup>*Chandradevi v. Sate of Tamil Nadu by Inspector of Police, C.B., C.I.D. (12.12.2002 – MADHC) MANU/TN/2335/2002*

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Fingerprints in various criminal cases. Also, there should be no flaws when the question comes as to the admissibility of these evidences, therefore following are the suggestions made in order to bring in changes for the better criminal justice system:-

Suggestions related to forensic fingerprints:-

- A. The Fingerprint evidence from the suspect should only be collected when there is some grounded reason or in other words reasonable grounds for suspecting the person committed the offence before the collection of such sample. It can be said that for the protection of the right to privacy it is important that the collection of the Fingerprint evidence of the suspect only be taken only after the Judge authorizes for such a collection.
- B. There must be a proper national or state regulatory body that must be authorize to establish the rules for Fingerprint evidence. There must be proper guidelines for the investigating agencies like police which are the primary bodies coming into the contact with the Fingerprint evidence. If proper rules regarding the collecting, handling and testing of such evidence are formulated then there will be no question of incompetency on the part of investigating agencies.
- C. The role of the Judges must be like that of the gatekeepers while evaluating the Fingerprint evidence. The pre- trial sessions can also be conducted before admitting the Fingerprint evidence, there must be some special persons to assist them in the evaluation of the Fingerprint evidence during the pre-trial hearings.
- D. There must be a proper law for the fingerprint evidence so that there can be no inconsistency for the same like the eligibility of the scientists conducting the fingerprint examination.
- E. The Preservation of the Fingerprint evidence is also a big risk to the privacy of an individual. The special legislation dealing with the Fingerprint evidence must be laid down which must contain the procedure for training of the police officers for collecting

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of the evidence from the crime scene, also what should be the storage and the maintenance of the data of the crime scene specimens.



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