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FORENSIC LAW

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I INTRODUCTION

“Every trial is a voyage of discovery in which truth is the quest”.¹

ONE WAY to view science is that it is search for truth.² Truth is the quintessence of justice. High Court of Madras in *Lourdhe v. State represented by the Inspector of Police*³ has referred *C. Magesh v. State of Karnataka*,⁴ where the apex court of India has observed that “... in criminal jurisprudence, evidence has to be evaluated on the touchstone of consistency. Needless to emphasize, consistency is the keyword for upholding the conviction of an accused. The apex court further held that “The evidence must be tested for its inherent consistency and the inherent probability of the story; consistency with the account of other witness is held to be creditworthy. The probative value of such evidence becomes eligible to be put into the scales for a cumulative evaluation.”⁵ Forensic Sciences provide a baseline for corroboration to instill scientific temper in investigation, which underlies the edifice for a fair trial. Janet Reno, the pioneer for promoting the ‘Innocence Project’ in the United States, recapped that “The use of forensic science as a tool in the search for truth allows justice to be done not only by apprehending the guilty but also by freeing the innocent.”⁶

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1 *Ritesh Tewari v. State of Uttar Pradesh* (2010) 10 SCC 677 at para 37: (2010) 4 SCC (Civ) 315. Also see: *Ram Chander v. State of Haryana* (1981) 3 SCC 191 at para 2; Lord Denning, in *Jones v. National Coal Board* (1957) 2 All ER 155(CA) at 64 (QB), had observed, “... It’s all very well to paint justice blind, but she does not better without a bandage round her eyes. She should be blind indeed to favour or prejudice, but clear to see which way lies the truth...”; *D. Subramanian v. The Inspector of Police* CrI. MP No. 5859 of 2017, High Court of Madras, decided on July 22, 2019; *State of Uttarkhand v. Akhtar Ali* 2019 SCC OnLine Utt 1558.

2 Linus Pauling, 1958. “Science is the search for truth - it is not a game in which one tries to beat his opponent, to do harm to others” in Beck, Emily Morison (ed.), *Familiar Quotations* (Boston: Little, Brown and Company, 1980).

3 2019 SCC OnLine Mad 5524.

4 (2010) 5 SCC 645.

5 *Suraj Singh v. State of Uttar Pradesh* (2008) 16 SCC 686 at 704, para 14: 2008 (11) SCR 286.

6 Janet Reno, Attorney General of United States, Keynote address before the American Academy of Forensic Sciences, Nashville, Tennessee, Feb. 21, 1996.

In the extant annual survey, nearly 300 judicial verdicts pronounced during 2019 by the Supreme Court and high court of various states have been analyzed to unfold several trends on forensic evidencing during the course of adjudication in civil and criminal matters. This survey explores legal issues pertaining to circumstantial evidence, primarily related to DNA profiling, voice spectroscopy, fingerprints, intertwined doctrines of privacy and consent, sexual offences and determination of age, complexities in rape-related pregnancy (RRP) and abortion *etc.*, which have helped the judicial system for corroboration, to arrive at the right conclusion during adjudication.⁷ Digital evidence such as call details records, CCTV footage provides a plethora of information helping to establish culpability as well as innocence.⁸ In cold cases, the doctrine of last seen together in conjunction with other evidence also plays important role in determining guilt.⁹

The focus of the survey hinges on legal analysis of battery of forensic evidence, which in juxtaposition with oral testimony, plays a significant role in the validation of facts related to crime to credibly prove guilt as well as innocence. Indeed, admissibility of expert opinion is conditioned upon several factors such as probity of forensic samples, maintenance of chain of custody, accreditation, righteous interpretation of expert reports and inter-linkages with vitals facts. These issues, for the ease of contextual clarity, have been deliberated in different sections of this survey.

II FAIRNESS IN EVIDENCE COLLECTION

‘Just, reasonable and fair’ are the basic threads for a responsive legal system. A fair investigation is the gateway to find the truth, a precursor for a fair trial, and an essential attribute for enabling the right to a dignified life. Worldwide the dignity jurisprudence is evolving and India is also adhered to its constitutional values to protect the right to life with dignity.¹⁰ High Court of Madhya Pradesh has observed that “Prosecution was duty-bound to produce all such documents on the record because its responsibility is not to punish somebody but to assist in fair trial”.¹¹ The apex court in *Vinubhai Haribhai Malaviya v. the State of Gujarat*¹² has observed:

- 7 *Vikram Rana v. State (NCT of Delhi)* 2019 SCC OnLine Del 6731: (2019) 257 DLT 380 (DB); *State (NCT of Delhi) v. Naresh Kumar* 2019 SCC OnLine Del 8756 : (2019) 261 DLT (DB). Also see: *Himachal Pradesh v. Manga Singh* 2028 SCC OnLine SC 2886 at paras 11 and 12; and *Dal Bahadur Darjeev. State of Sikkim* 2019 SCC OnLine Sikk122 : 2019 Cri LJ 4929 : (2019) 204 AIC (Sum 36) 15.
- 8 *Vidhyalakshmi v. State of Kerala* (2019) 4 SCC 623. Also see: *National Investigation Agency v. Zahoor Ahmad Shah Watali* (2019) 5 SCC 1.
- 9 *Arvind @ Chottu v. State (NCT of Delhi)* ILR (2009) Supp. (Delhi) 704 at para 103. Also see: *State of Rajasthan v. Kanshi Ram* (2006) 12 254 at para 23; and *Balbir Singh v. State of Himachal Pradesh* 2019 SCC OnLine 95.
- 10 AK Sikri, “Growing Significance of Dignity Jurisprudence in the World of Ascending Human Rights” (2019) 4 SCC J-3. Also see: *Francis Coralie Mullin v. Union Territory of Delhi* (1981) 1 SCC 608.
- 11 *Ankur v. State of Madhya Pradesh* 2019 SCC OnLine MP 4915 at para 152.
- 12 2019 SCC OnLine SC 1346 at para 20: 2019 (5) KHC 352 (SC) at para 17. Also see: *Pooja Pal v. Union of India* (2016) 3 SCC 135 at para 21.

It is clear that a fair trial must kick-off only after an investigation is itself fair and just. The ultimate aim of all investigation and inquiry, whether by the police or by the Magistrate, is to ensure that those who have actually committed a crime are correctly booked, and those who have not are not arraigned to stand trial. That this is the minimal procedural requirement that is the fundamental requirement of Art.21 of the Constitution of India cannot be doubted. It is the hovering omnipresence of Art.21 over the CrPC that must needs to inform the interpretation of all the provisions of the CrPC, so as to ensure that Art.21 is followed both in letter and in spirit.

“A fair investigation is a *sine qua non* of Article 21 of the Constitution of India, wherein an investigation has to be unbiased, and without any prejudice for or against the accused because if the same is partial and unfair then the whole criminal justice system will be at stake and the same will erode the confidence of the common citizen” observed the high court in *Runeet Gulati v. State (NCT of Delhi)*.¹³ The court further observed that “As a general principle, it can be stated that error, illegality or defect in investigation cannot have any impact unless miscarriage of justice is brought about or serious prejudice is caused to the Appellant. If the prosecution case is established by the evidence adduced, any failure or omission on the part of the Investigating Officer cannot render the case of the prosecution doubtful. If direct evidence is credible then failure, defect or negligence in investigation cannot adversely affect the prosecution case, though the Court should be circumspect in evaluating the evidence”.¹⁴

Expert opinion and fair investigation

The apex court judiciously acknowledged that impartial and truthful investigation is imperative and fair trial includes fair investigation, as envisaged by articles 20 and 21 of the Indian Constitution.¹⁵ The court held that “The investigation should be judicious, fair, transparent and expeditious to ensure compliance with the basic rule of law.”¹⁶ In this gruesome case of the murder in which one lady was also raped and two persons survived with injuries, police falsely implicated poor innocent labourers from nomadic tribes, who suffered 16 years on death row. The DNA samples of accused

13 2019 SCC OnLine Del 10208 at para 96. Also see: *State of Karnataka v. Yarappa Reddy* (1998) 8 SCC 715, at para 19, the apex court held that “It can be a guiding principle that as investigation is not the solitary area for judicial scrutiny in a criminal trial, the conclusion of the Court in the case cannot be allowed to depend solely on the probity of investigation. It is well-nigh settled that even if the investigation is illegal or even suspicious the rest of the evidence must be scrutinized independently of the impact of it. Otherwise the criminal trial will plummet to the level of the investigating officers ruling the roost. The Court must have predominance and pre-eminence in criminal trials over the action taken by the investigation officers. Criminal Justice should not be made a casualty for the wrongs committed by the investigating officers in the case”.

14 *Id.*, para 98.

15 *Ankush Maruti Shinde v. State of Maharashtra* (2019) 15 SCC 470 at para 10: (2020) 1 SCC (Cri) 315: 2019 SCC OnLine SC 317.

16 *Id.*, at para 10.2. Also see: *V.K. Sashikala v. State of Tamil Nadu* (2012) 9 SCC 771: (2013) 1 SCC (Cri) 1010; and *State of Gujarat v. Kishanbhai* (2014) 5 SCC 108: (2014) 2 SCC (Cri) 457.

were collected but prosecution never presented a report before the court. No pubic hair, semen or blood of accused were found on any victims, which rendered prosecution case doubtful. The apex court has succinctly elaborated the role of an expert by observing:¹⁷

The law of evidence is designed to ensure that the court considers only that evidence which will enable it to reach a reliable conclusion. The first and foremost requirement for expert evidence to be admissible is that it is necessary to hear the expert evidence. The test is that the matter is outside the knowledge and experience of the layperson. Thus, there is a need to hear an expert opinion where there is a medical issue to be settled. The scientific question involved is assumed to be not within the court's knowledge. Thus cases, where the science involved, is highly specialised and perhaps even esoteric, the central role of an expert cannot be disputed.

The apex court has further reiterated that an accused is presumed to be innocent till he is proved guilty beyond a reasonable doubt, is a principle that cannot be sacrificed on the altar of inefficiency, inadequacy or inapt handling of the investigation by the police. The benefit arising from any such faulty investigation ought to go to the accused and not to the prosecution.¹⁸ During proceedings before High Court of Allahabad on an application for bail cancellation of the dreaded accused alleged for abducting and killing a ten years old boy, an atrocious fact was revealed where this accused had allegedly raped a 14 years old girl, who was a close relative of the deceased boy, and she got impregnated and gave birth to a child.¹⁹ Despite the court order for conducting DNA, the accused did not come forward, and eventually, rape victim got married to a third person. Without dealing with the court order for conducting DNA, the additional session court, Lucknow, in 2011, acquitted the accused of rape on the premise that the prosecutrix got hostile. The complainant (a relative of the prosecutrix) had filed an appeal against the impugned order of acquittal, but the matter is pending in High Court of Allahabad. This is a stark travesty of justice, and higher judiciary must take cognizance of existing nexus between the accused and actors of the criminal justice system. It is need of the hour that the potency of DNA test must be utilized in sexual offences, and in case of rape-related pregnancies and delivery of children, DNA test must be made compulsory in the interest of justice.

17 *Ramesh Chandra Agarwal v. Regency Hospital Ltd.* (2009) 9 SCC 709 at para 16; (2009) 3 SCC (Civ) 840. Also see: *Pattu Rajan v. State of Tamil Nadu* (2019) 15 SCC 771 at para 50; (2019) 2 SCC (Cr) 354.

18 *Kailash Gour v. State of Assam* (2012) 2 SCC 34. Also see: *State (NCT of Delhi) v. Kuldeep* 2019 SCC OnLine Del 7261 para 19.

19 *Ram Ujagar Dwivedi v. State of Uttar Pradesh* 2019 SCC OnLine All 801.

The apex court in *Ankush Maruti Shinde v. The State of Maharashtra*²⁰ observed that “Murder and rape is indeed a reprehensible act and every perpetrator should be punished”,²¹ and directed the state authorities to identify erring officers and take departmental action against them for culpable lapse resulting in acquittal in a case of brutal murder of five persons and rape of one female. Impartial and truthful disclosure of facts is imperative aims of investigation. The court further recapped that “... The benefit of the lapse in the investigation and/or unfair investigation cannot be permitted to go to the persons who are real culprits and in fact who committed the offence”.²² It is a proven fact that circumstantial evidence infuses fairness in the judicial process, and forensic inputs have immense credibility appropriated by a global community of scientists and jurists.

III CIRCUMSTANTIAL EVIDENCE

Corroboration entails scientific pursuit and fairness in the administration of justice. The Supreme Court has postulated five guidelines (*Panchsheel*) for proving a case beyond reasonable doubt based on circumstantial evidence.²³ The apex court in *Vaishnav v. State of Chhattisgarh*, held that:²⁴

In order to sustain the conviction based on circumstantial evidence, the following three conditions must be satisfied: (i) the circumstances from which an inference of guilt is sought to be drawn, must be cogently and firmly established; (ii) those circumstances should be of a definite tendency unerringly pointing towards the guilt of the accused; and (iii) the circumstances, taken cumulatively, should form a chain so complete that there is no escape from the conclusion that within all human probability the crime was committed by the accused and none else, and it should also be incapable of explanation on any other hypothesis than that of the guilt of the accused.

20 *Supra* note 15 at para 17. Also see: *State of Uttar Pradesh v. Haider* (2019) 2 SCC 303; *Mahavir Singh v. State of Madhya Pradesh* (2016) 10 SCC 220; *Vijay Kumar v. State of Jammu and Kashmir*, AIR 2019 SC 298; and *State of Gujarat v. Kiashanbhai* (2014) 5 SCC 108 at paras 22 and 23 : (2014) 2 SCC (Cri) 457.

21 *Id.* at para 17.

22 *Id.* at para 14. Also see: *Mahavir Singh v. State of Madhya Pradesh* (2016) 10 SCC 220 at paras 27 and 28. In *State of Karnataka v. Yarappa Reddy* [(1999) 8 SCC 715 : AIR 2000 SC 185] the apex court held that the criminal justice system does not solely rest on the probity of investigation and criminal trial cannot be allowed to plummet to the level of investigation officers ruling the roost. Even if the investigation is illegal or even suspicious, the rest of evidence must be scrutinized independently of the impact of it.

23 *Shivaji Sahabrao Bobade v. State of Maharashtra* (1973) 2 SCC 793 at para 19: 1973 SCC (Cri) 1033. Also see: *Sharda Birdi Chand Sarda v. State of Maharashtra* (1984) 4 SCC 185: 1984 AIR 1622 : 1985 SCR (1) 88; *Patlu Rajan v. State of Tamil Nadu* (2019) 15 SCC 771 : (2019) 2 SCC (Cr) 354 : 2019 SCC OnLine SC 444; *Sunita v. State of Haryana* (2019) 14 SCC 258: (2019) 4 SCC (Cri) 812 : 2019 SCC OnLine SC 943; *Hanumant v. State of Madhya Pradesh* AIR 1952 SC 343: 1953 CriLJ 129 : [1953] 1 SCR 1091; and *King v. Horry* [1952] NZLR 111.

24 (2019) 4 SCC 522 at para 16: (2019) 2 SCC (Cri) 300 : 2019 SCC OnLine SC 316. Also see: *Cyrone Rodrigues v. State of Goa* 2019 SCC OnLine Bom 1828 at para 25.

The apex court has succinctly dealt with the distinction between residual doubt and reasonable doubt in *Ravishankar alias Baba Vishwakarma v. State of Madhya Pradesh*.²⁵ Deliberating on the nature of evidence, the apex court held that ‘direct evidence’ proves existence of a particular fact that emanates from a document or an object and/or what has been observed and deposed by a witness. On other hand, ‘circumstantial evidence’ is one whereby other facts are proved from which existence of the fact in issue may either be logically inferred or at least rendered more probable. In the context of crime, the circumstantial evidence essentially means such facts and surrounding factors which do point towards complicity of charged accused, and then a chain of circumstance means such unquestionable linking of facts and surrounding factors that they establish only guilt of charged accused beyond reasonable doubt and rule out any other theory or hypothesis or possibility. The Supreme Court further held that the circumstance cannot lie, however, they can be misled or false clue may be laid by the wrongdoer to cast suspicion.²⁶ The High Court of Orissa promulgated that “When falsehood is not ruled out in either one of the circumstances advanced by the prosecution, the hypothesis required to be tested cannot be said to have been established beyond a reasonable doubt”.²⁷ Matching hair is yet other circumstantial evidence in criminal matters.²⁸

Recovery under section 27 vis-à-vis testimonial compulsion

In *Ashish Jain v. Makrand Singh*²⁹ the trial court awarded death penalty for robbery and murder of three members of a family. The double bench of the high court referred the matter to larger bench since judges had a difference of opinion. The three-judge bench upheld the conviction. In this case, the hairs and fingerprints were collected from the crime scene and police had made recovery of some items of robbed

25 (2019) 9 SCC 689 : (2019) 3 SCC (Cri) 768 : 2019 SCC OnLine SC 1290 at page 706, paras 55 to 59. Also see: *State v. McKinney*, 74 SW 3d 291 (Tenn 2002). In the *Ravishankar*, the apex court observed, “*Ashok Debbarma* [*Ashok Debbarma v. State of Tripura*, (2014) 4 SCC 747 : (2014) 2 SCC (Cri) 417] drew a distinction between a “residual doubt”, which is any remaining or lingering doubt about the defendant’s guilt which might remain at the sentencing stage despite satisfaction of the “beyond a reasonable doubt” standard during conviction, and reasonable doubts which as defined in *Krishnan v. State* [*Krishnan v. State* (2003) 7 SCC 56 : 2003 SCC (Cri) 1577] are “actual and substantive, and not merely imaginary, trivial or merely possible”. These “residual doubts” although not relevant for conviction, would tilt towards mitigating circumstance to be taken note of whilst considering whether the case falls under the “rarest of rare” category”. (at 707, para 58).

26 *Gargi v. State of Haryana* (2019) 9 SCC 738 at paras 17 to 18.6 : (2019) 3 SCC (Cri) 785 : 2019 SCC OnLine SC 1229. Also see: *Sonvir v. State (NCT of Delhi)* (2018) 8 SCC 24 : (2018) 3 SCC (Cri) 486.

27 *Bhagaban Gouda v. State of Odisha* 2019 SCC OnLine Ori 359: (2020) 206 AIC 721 at para 32. Also see: *Ram Kishan Singh v. Harmit Kumar* [(1972) 3 SCC 280: AIR 1972 SC 468 at para 8], the apex held that “A statement under Section 164 of the Code of Criminal Procedure is not substantive evidence. It can be used to corroborate the statement of a witness. It can be used to contradict a witness”; and *Pankaj v. State of Himachal Pradesh* 2019 SCC OnLine HP 1440.

28 *Kamal Kumar v. State of Himachal Pradesh* 2019 SCC OnLine HP 1608 at para 12(viii).

29 (2019) 3 SCC 770: (2019) 2 SCC (Cri) 256 : 2019 SCC OnLine SC 37.

property. It is surprising to note that despite available biological samples, DNA was not conducted but only blood group analysis was done at FSL. The blood group report was rebutted because one of the deceased had the same blood group. The apex court upheld the acquittal and also deliberated upon nexus between the recovery under section 27 of the Evidence Act, and self-incrimination doctrine under article 20(3) of the Indian Constitution. "Section 27 of the Evidence Act is the doctrine of confirmation by the subsequent events. The doctrine is founded on the principle that if any fact is discovered in a search made on the strength of any information obtained from an accused; such a discovery is true and admissible. The information might be confessional or non-inculpatory in nature, but if it results in discovery of a fact it becomes reliable information" observed apex court in *Runeet Gulati v. State (NCT of Delhi)*.³⁰ The apex court in the *Ashish Jain* has observed:³¹

We find from the totality of facts and circumstances that the confessions that led to the recovery of the incriminating material were not voluntary but caused by inducement, pressure or coercion. Once a confessional statement of the accused on facts is found to be involuntary, it is hit by Article 20(3) of the Constitution, rendering such a confession inadmissible. There is an embargo on accepting self-incriminatory evidence, but if it leads to the recovery of material objects in relation to a crime, it is most often taken to hold evidentiary value as per the circumstances of each case. However, if such a statement is made under undue pressure and compulsion from the investigating officer, as in the present matter, the evidentiary value of such a statement leading to the recovery is nullified.

The apex court held that the fact discovered embraces the place where recovery made and the knowledge of the accused as to it and not the object recovered.³² In *Digamber Vaishnav v. State of Chhattisgarh*,³³ the Supreme Court has summarized principle for conviction solely based on circumstantial evidence. The court also held that, if two views are possible based on evidence adduced in a case, one point to the guilt of the accused and other to his innocence, later must be adopted to exonerate him.³⁴

30 2019 SCC OnLine Del 10208 at para 78. Also see: *Bodh Raj @ Bodhav. State of Jammu and Kashmir* (2019) 3 SCC 770 .

31 *Supra* note 29 at 780, para 24. Also see: *Selvi v. State of Karnataka* (2010) 7 SCC 263 : (2010) 3 SCC (Cri) 1 at paras 102, 103, 133-135; *State of Bombay v. Kathi Kalu Oghad* AIR 1961 SC 1808 : (1961) 2 Cri LJ 856 : (1962) 3 SCR 10 at para 13; and *Abdul v. State of Sikkim* 2019 SCC OnLine Sikk 199. The apex court, in *Digamber Vaishnav v. State of Chhattisgarh* (2019) 4 SCC 522 at para 29: (2019) 2 SCC (Cri) 300: 2019 SCC OnLine SC 316, held that "... Under Section 27 of the Evidence Act, it is not the discovery of every fact that is admissible but the discovery of relevant fact is alone admissible. Relevancy is nothing but the connection or the link between the facts discovered with the crime."

32 *State of Himachal Pradesh v. Jeet Singh* (1999) 4 SCC 370. Also see: *Cyrone Rodrigues v. State of Goa* 2019 SCC OnLine Bom 1828 at para 56.

33 (2019) 4 SCC 522 at para 16: (2019) 2 SCC (Cri) 300: 2019 SCC OnLine SC 316.

34 *Id.* at 19.

IV COMPLEXITIES IN AGE DETERMINATION

Age determination may be required for various purposes both in civil and criminal matters. This is manifestly mandated under the POCSO Act, 2012 and the JJ Act, 2015. In India, child sexual abuse (CSA) are being dealt by the POCSO Act, 2012,³⁵ however, proving the age of minority of the victim is the onerous duty of the prosecution to attract the provision of the special enactment.³⁶ This legal obligation necessitates the determination of age as a crucial factor to administer justice under the POCSO provisions.³⁷ However, age determination is a crucial but complex phenomenon.³⁸ Section 34 of the POCSO Act, 2012 deals with “Procedure in case of offence by child and determination of the age by Special Court”, but the procedure was explicated by

- 35 The Prevention of Child Sexual Offence Act, 2012 (Act No. 32 of 2012) came into force from Nov. 14, 2012. The POCSO (Amendment) Act, 2019 [Act No. 25 of 2019], under different provisions, has enhanced the quantum of punishment including death penalty under ss. 4 and 6.
- 36 *Sunil v. State of Haryana* (2010) 1 SCC 742 para 26; (2010) 1 SCC. (Cri) 910. Also see: *Ashok Kumar Pariyar v. State of Sikkim* 2019 SCC OnLine Sikk 120; 2010 Cri LJ 350.
- 37 *Aswani Kumar Saxena v. State of Madhya Pradesh* (2012) 9 SCC 750; (2013) 1 SCC (Cri) 594, at para 34, the apex court held not to conduct robing enquiry, except “only in cases where those documents or certificates are found to be fabricated or manipulated, the court, the Juvenile Board or committee need to go for medical report for age determination”. Also see: *Parag Bhatt v. State of U.P.* (2016) 12 SCC 744; and *Thanesh Kumar v. State of U.P.* 2019 SCC OnLine All 4583. In catena of CSA cases prosecution could not prove minority age of the procecatrix: *Bharat Bhushan Upadhyaya v. State of Jharkhand* 2019 SCC OnLine Jhar 133; *Ganesh v. State of Maharashtra* 2019 SCC OnLine Bom 1204 : 2019 SCC OnLine All 2939 : (2020) 1 All LJ 622; *State of Sikkim v. Sashidhar Sharma* 2019 SCC OnLine Sikk 154; *Abuzar Hossain v. State of West Bengal* (2012) 10 SCC 489; *In re: Om Prakash v. State of Rajasthan* (2012) 5 SCC 201 at para 35; *Om Prakash v. Union of India* 2019 SCC OnLine Utt 820; and *Mustakeem v. State of Uttar Pradesh* 2019 SCC OnLine All 5769.
- 38 *Mukarrab v. State of Uttar Pradesh* (2017) 2 SCC 210, the court on issue of age determination has observed, “Time and again, the questions arise: How to determine age in the absence of birth certificate? Should documentary evidence be preferred over medical evidence? How to use the medical evidence? Is the standard of proof, a proof beyond reasonable doubt or can the age be determined by preponderance of evidence? Should the person whose age cannot be determined exactly, be given the benefit of doubt and be treated as a child? In the absence of a birth certificate issued soon after birth by the concerned authority, determination of age becomes a very difficult task providing a lot of discretion to the Judges to pick and choose evidence. In different cases, different evidence has been used to determine the age of the accused” (para 11). The court further held that radiological based x-rays ossification test for age determination is no doubt a useful guiding principle to know the span of age, but evidence is not of a conclusive and on controvertible nature and it is subject to a margin of error. Such medical opinion by no means be so infallible and accurate a test to indicate the correct number of years and days of person life, however, if need be, it must be considered along with other circumstances. The apex court has also observed that age of a person above 30 years cannot be determined with precision. Also see: *Bhagwat Munjabhau Hoge v. State of Maharashtra* 2019 SCC OnLine Bom 929; *Nawab Kazim Ali Khan v. Mohd. Abdullah Azam Khan* 2019 SCC OnLine All 5333; and *Surabuddin v. State of West Bengal* 2019 SCC OnLine Cal 2378: (2019) 4 Cal LT 514 para 45.

the apex court in *Jarnail Singh* case.³⁹ During this survey it was observed that the courts have noticed the apathetic attitude of the investigators particularly in collecting evidence of the age of the prosecutrix claiming as a minor.⁴⁰ Age is again significant to keep a victim in a protection home.⁴¹ Further, "... the age determination is very crucial for the child as the same has the potential to expose him to the possibility of being transferred to the Children's Court to be tried as an adult."⁴² Even if the claim

39 *Jarnail Singh v. State of Haryana* (2013) 7 SCC 263 para 22 and 23 : (2013) 3 SCC (Cri) 302 : 2013 SCC OnLine SC 507. The court held that for determination of age of minor (victim or accused) Rule 12 of the Juvenile Justice (Care and Protection of Children) Rules, 2007 may be used. After enactment of the JJ Act, 2015, procedure for age determination is described under s. 94:

(1) Where, it is obvious to the Committee or the Board, based on the appearance of the person brought before it under any of the provisions of this Act (other than for the purpose of giving evidence) that the said person is a child, the Committee or the Board shall record such observation stating the age of the child as nearly as may be and proceed with the inquiry under section 14 or section 36, as the case may be, without waiting for further confirmation of the age.

(2) In case, the Committee or the Board has reasonable grounds for doubt regarding whether the person brought before it is a child or not, the Committee or the Board, as the case may be, shall undertake the process of age determination, by seeking evidence by obtaining—

(i) the date of birth certificate from the school, or the matriculation or equivalent certificate from the concerned examination Board, if available; and in the absence thereof;

(ii) the birth certificate given by a corporation or a municipal authority or a panchayat;

(iii) and only in the absence of (i) and (ii) above, age shall be determined by an ossification test or any other latest medical age determination test conducted on the orders of the Committee or the Board:

Provided such age determination test conducted on the order of the Committee or the Board shall be completed within fifteen days from the date of such order.

(3) The age recorded by the Committee or the Board to be the age of person so brought before it shall, for the purpose of this Act, be deemed to be the true age of that person.

Note: R. 18(iv) of the JJ Rules, 2016 clarifies that "For the age determination of the victim, in relation to offences against children under the Act, the same procedures mandated for the Board and the Committee under section 94 of the Act to be followed".

Also see; *Lourdhe v. State represented by the Inspector of Police* 2019 SCC OnLine Mad 5524 at para 61; *Ram Karan v. State of Uttar Pradesh* 2019 SCC OnLine All 5757; *Valajindra Kaur v. State of Uttar Pradesh* 2019 SCC OnLine All 5846 : (2019) 109 ACC 340 : (2019) 203 AIC 884 : (2020) 110 ACC (Sum 44) 17; and *State (NCT of Delhi) v. Deepak* 2019 SCC OnLine Del 11574.

40 *State of Maharashtra v. Prashant Baburao Gawand* 2019 SCC OnLine Bom 5106. Also see: *Nevendra v. State of Madhya Pradesh* 2019 SCC OnLine MP 2806, at para 24, the high court has directed to initiate departmental action against SHO for suppression of fact about the school certificate for concealing the fact of minority of the prosecutrix.

41 *Kajal v. State of Uttar Pradesh* 2019 SCC OnLine All 3909 : (2019) 3 ALL LJ 604 : 2019 Cri LJ 2997 : (2019) 109 ACC (Sum 108) 44 : (2020) 138 ALR (SUM 20) 9. Also see: *Ramsakhi v. State of Uttar Pradesh* 2019 SCC OnLine All 2129; and *Suraj Kumar v. State of Bihar* 2019 SCC OnLine Pat 2420.

42 *Lalu v. State of Bihar* 2019 SCC OnLine Pat 1697 at paras 99. Also see: *Nardev v. State (NCT of Delhi)* 2019 SCC OnLine Del 10500; *State of J and K v. Shubam Sangra* 2019 SCC OnLine J and K 836; *Umda Devi v. State of Bihar* 2019 SCC OnLine Pat 1805; *Udhyanthi v. State of Tamil Nadu* 2019 SCC OnLine Mad 9061; and *Pawan Kumar Gupta v. State (NCT of Delhi)* 2019 SCC OnLine Del 11870.

of juvenility is not raised before the trial court, such claim is maintainable before the high court or the Supreme Court.⁴³ Age determination is crucial even for service matters.⁴⁴

In 2019, the apex court observed that “Section 94(2)(i) indicates a significant change over the provisions which were contained in Rule 12(3)(a) of the Rules of 2007 made under the Act of 2000. Under Rule 12(3)(a)(i) the matriculation or equivalent certificate was given precedence and it was only in the event of the certificate not being available that the date of birth certificate from the school first attended, could be obtained. In section 94(2)(i) both the date of birth certificate from the school as well as the matriculation or equivalent certificate is placed in the same category”.⁴⁵ In case claims of age has confusion due to conflicting school certificates, an enquiry must be conducted by the court or the Board to take evidence for establishing credibility and authenticity of the documents to determine the age.⁴⁶

In *Suhani v. State of U.P.*,⁴⁷ the apex court has placed reliance on the medical report of All India Medical Institute (AIIMS) negating the age as indicated in CBSE certificate. In *Nisha Naaz v. State of U.P.*,⁴⁸ the issue was raised whether *Suhani*’s case overrules earlier judgments on the determination of age.⁴⁹ In *Priyanka Devi v. State of U.P.*,⁵⁰ the apex court further observed that there is no significant change

43 *Raju v. State of Haryana* (2019) 14 SCC 401 at para 10 and 11. Also see: *Pratap Singh @ Pikki v. State of Uttarakhand* (2019) 7 SCC 424 at para 21; *Mohan Mali v. State of M.P.* (2010) 6 SCC 669 : (2010) 3 SCC (Cri) 208; *Daya Nand v. State of Haryana* (2011) 2 SCC 224 : (2011) 1 SCC (Cri) 266; *Dharambir v. State (NCT of Delhi)* (2010) 5 SCC 344 : (2010) 2 SCC (Cri) 1274; and *Titendra Singh v. State of U.P.* (2013) 11 SCC 193 : (2013) 4 SCC (Cri) 725.

44 *Bharat Cooking Coal Ltd. v. Syham Kishore Singh* 2019 SCC OnLine Jhar 2412. Also see: *Bharat Cooking Coal Ltd. v. Chhota Birsa Urawn* (2014) 12 SCC 570; *Central Coal Field Ltd. v. Ajay Kumar Dubey* 2019 SCC OnLine Jhar 583; *Central Coal Field Ltd. v. Prashant Kumar Oraon* 2019 SCC OnLine Jhar 575; and *Ashoke Kumar Chatterjee v. Eastern Coalfields Ltd.* 2019 SCC OnLine Cal 5201.

45 *Sanjeev Kumar Gupta v. State of Uttar Pradesh* (2019) 12 SCC 370. Also see: *Sandip Samadhan v. State of Maharashtra* 2019 SCC OnLine Bom 3105.

46 *Id.* at para 17. Also see: *Gajab Singh v. State of Haryana* 2019 SCC OnLine P&H 869; *Pargya Bharti v. State of Uttar Pradesh* (2016) 12 SCC 744 : (2017) 3 SCC (Cri) 819; and *Ramdeo Chauhan v. State of Assam* (2001) 5 SCC 714 : (2001) SCC (Cri) 915 : AIR 2001 SC 2231 : 2001 Cri LJ 2902. The apex court, in *State of Madhya Pradesh v. Preetam*, enunciated that “... In each and every case the prosecution cannot be expected to examine the person who has admitted a student in the school. The school registers are the authentic documents being maintained in the official course, entitled to credence of much weight unless proved otherwise.”

47 2018 SCC OnLine SC 781. Also see: *Narendra Yadav v. State of U.P.* 2019 SCC OnLine All 4410 : (2019) 107 ACC (Sum 75) 21 : (2019) 5 All LJ 456 : 2020 CrLJ (NOC 79) 25.

48 2019 SCC OnLine SC 4062. Also see: *Parvati Kumari v. State of U.P.* Petition (Misc.) No. 13419 of 2018, where High Court of Allahabad on Jan. 9, 2019 held that an entry of date of birth in Aadhar is not conclusive.

49 *Mahadeo v. State of Maharashtra* (2013) 14 SCC 637; *Jarnail Singh v. State of Haryana* (2013) 7 SCC 263; and *State of Madhya Pradesh v. Anoop Singh* (2015) 7 SC 773. Also see: *Reju v. State of Kerala* 2019 SCC OnLine Ker 2290: 2010 Cri LJ (NOC 4) 2.

50 Habeas Corpus Petition No. 55317 of 2017, the Supreme Court, decided on Nov. 21, 2017.

brought about in age determination under the JJ Act, 2015 and the earlier Act, 2000 and the Rules, 2007 framed thereunder, in so far as weightage to medico-legal evidence is concerned. The High Court of Allahabad in *Nisha Naaz* case held that "... The said decision [*Suhani's* case] cannot be taken as a decision that overrules the earlier binding precedents which lay down the manner in which the age of a child is to be determined".⁵¹

In the *Sanjeev Kumar Gupta* case,⁵² the issue was raised that section 94 of the Act, 2015, being procedural law must prevail over Rule 12 of the JJ Rules, 2007 under the Act, 2000. The apex court has not dealt this issue probably considering that it is a settled legal doctrine that procedural law also operates from retrospective effect, but this issue needs to be illuminated by the apex court for ensuring legal certainty and clarity in adjudication. During the survey, it is observed that over the years the judicial approach is assorted causing inconsistency and ambiguity in legal interpretation warranting for construing a detailed charter for determination of age.

V ADJUDICATION OF CIVIL MATTERS

Forensic evidence may be used for civil dispute resolution such as determining paternity, devolution petitions, business conflicts *etc.* DNA prudently determines parentage which may help to adjudicate disputes related to devolution of property.⁵³ The allegation of misappropriation of germplasm of maize was raised before High Court of Delhi and a request was made to conduct DNA test for determining the genetic profile of KMH50 and 30V92 varieties of maize. The court held that "Pioneer application for conducting the special test in the nature of DNA profiling of the variety KMH50 and 30V92 is restored to the file of Registrar for considering it afresh, if necessary."⁵⁴

Parentage determination

It is observed in the previous year's annual surveys⁵⁵ that during matrimonial discord, in order to avoid payment of maintenance to desolate wife and children, blaming the wife for extra-marital relationship and alleging the birth of child beyond lawful wedlock, are routine grounds for seeking divorce by a disgruntled husband. To prove such allegations, the husband generally demands paternity determination by

51 *Supra* note 45 at paras 15, and 19. Also see: *Indian Bank v. ABS Marine Products (P) Ltd.* (2006) 5 SCC 72; *Ganesh v. State of Maharashtra* 2019 SCC OnLine Bom 1204; and *State of Maharashtra v. Prashant Baburao Gawand* 2019 SCC OnLine Bom 5106.

52 *Supra* note 45.

53 *Krishan Kumar Saini v. Rajinder Kumar Saini* 2019 SCC OnLine Del 10637: (2020) 205 AIC 542.

54 *Pioneer Overseas Corporation v. Chairperson, Plant Verities and Farmers Rights* 2019 SCC OnLine Del 8994 : (2019) 262 DLT 411 at para 94.

55 GK Goswami, "Forensic law" *L ASIL* 654 (2015); and GK Goswami, "Forensic Law" *LI ASIL* 608 (2016).

conducting the DNA test of the child. Indian courts through a series of judgments,⁵⁶ have developed a comprehensive jurisprudence to deal with legal issue of paternity (parentage) determination by DNA in addition to section 112 of the Indian Evidence Act, 1872. The author of this survey has identified three distinct phases of DNA led paternity determination by the Indian courts.⁵⁷ In a nutshell, in the first phase till 2000, the apex court stressed on presumption based paternity as enshrined under section 112.⁵⁸ In civil disputes, an adverse view was to be taken for refusal to giving DNA sample, as per the guidance of the apex court in the *Gautam Kundu*.⁵⁹ Between 2001 to 2010, the apex court developed the concept of ‘eminent need’⁶⁰ to conduct DNA. However, the *Rohit Shekhar* case⁶¹ was watershed which preferred DNA over section

- 56 *Vasu v. Santha* 1975 Kerala Law Times at 533; *Hargavind Soni v. Ramdulari*, AIR 1986 MP 57; *Raghunath v. Sardabai* 1986 AIR Bombay 388; *Bhartiraj v. Sumesh Sachedo* 1986 AIR Allahabad 2591; *Dukhtar Jahan v. Mohammed Farooq* (1987) 1 SCC 624 : AIR 1987 SC 1049; *Goutam Kundu v. State of West Bengal* (1993) 3 SCC 418 : 1993 AIR 2295 : 1993 SCR (3) 917; *Sharda v. Dharmpal* (2003) 4 SCC 493 : AIR 2003 SC 3450 : 2003 (3) ALT 41 SC : 2003 (2) AWC 1534 SC : 2003 (2) BLJR 1420 : 2003 (2) CTC 760 : I (2003) DMC 627 SC : 2004 (1) JCR 98 SC : JT 2003 (3) SC 399 : 2003 (2) KLT 243 SC : RLW 2003 (3) SC 379 : 2003 (3) SCALE 475; *Banarasi Dass v. Teeku Dutta* (2005) 4 SCC 499; *Sham Lal @ Kuldeep v. Sanjeev Kumar* (2009) 12 SCC 454; *Ramkanya Bai v. Bharatram* (2010) 1 SCC 85; 2009 ALL SCR 2543 : 2010 (1) SCJ 1 (SC); *Nandlal Wasudeo Badwaik v. Lata Nandlal Badwaik* (2014) 2 SCC 576; *Dipanwita Roy v. Romobroto Roy* (2015) 1 SCC 365 : (2015) 1 SCC (Cri) 683 : (2015) 1 SCC (Civ) 495 : 2014 SCC OnLine SC 831; *Wilson v. Wilson* Lancet [1942] 1. 570; and *Morris v. Davies* (1837) 5 Cl. and Fin. 163.
- 57 GK Goswami, “Three Decades of DNA Evidence: Judicial Perspective and Future Challenges in India” in HirakRanjan Das *et. al.* (eds.) *DNA Fingerprinting: Advancements and Future Endeavours* 181-205 (Springer Nature: Singapore, 2018).
- 58 *Gautam Kundu v. State of West Bengal* (1993) 3 SCC 418: 1993 SCC (Cri) 928. At para 26, five guidelines were culled out by the apex court for conducting DNA test for paternity determination.
- 59 *Id.* Also see: *Sukhdeb Barman v. Kakali Barman (Manna)* 2019 SCC OnLine Cal 6130 para 18.
- 60 In *Bhabani Prasad*, the apex court held that while considering prayer for DNA test, courts are required to consider diverse aspects including presumption under s. 112 of the Evidence Act; pros and cons of such order and the test of ‘eminent need’ whether it is not possible for the court to reach the truth without use of such test, but, in the case at hand, where child (plaintiff) has admittedly achieved majority and wants to ascertain her paternity, prayer having been made by her for DNA profiling ought not have been denied, while applying principle of “eminent need”. The court also held that the State Commission for Women does not have power to order DNA test. Also see: *Naveeta v. Bhagwan Singh* 2019 SCC OnLine HP 805 : AIR 2019 HP 140; *Komalan v. Sreekumary* 2019 SCC OnLine Ker 5022; *Sujit Ganesh Lawande v. Maharashtra State Commissioner for Women* 2019 SCC OnLine Bom; and *KPMG India Pvt. Ltd. v. National Commission for Women* 2014 SCC OnLine Bom 4825 : 2014 Lab IC 4311 : (2014) 5 AIR Bom R 517..
- 61 (2012) 12 SCC 554 at 569 para 56. Also see: *Rohit Shekhar v. Narayan Dutta Tiwari* 2010 SCC OnLine Del 4575 : ILR (2011) 2 Del 14 : 2011 Cri LJ 2549 : 2011 KHC 2377, High Court of Delhi at para 20 has observed, “... that the above decisions are authorities in matters where it is the father who is resisting parentage at the cost of bastardizing the child. The same rationale does not however, apply, in situations where the child, who, on attaining adulthood, moves the Court for a declaration to determine his/her parentage, as in this case. There would then be no question of ‘protective jurisdiction’ of the Court since the declaration sought is on his/her behalf about the true paternity, as opposed to the legitimacy ordained by law. It is true that courts have not come across an occasion to draw this distinction since invariably the interests

112 and this percept culminated in the *Nandlal Wadwaik*⁶² and the *Dipanwita Roy*.⁶³ “Truth must prevail is the hallmark of justice”, the apex court coined the axiom in this context.⁶⁴ The courts usually pooh-poohed repeat DNA test for paternity determination.⁶⁵ Due to different juridical approaches for paternity determination, the conundrum persists and various courts define the law as their preferred interpretation. This brings evident inconsistency and uncertainty in law and procedures. In addition, the legal mechanism in the Indian legal lexicon is missing with regard to the determination of maternity of a child, especially in view of emerging complexities due to assisted reproduction. The attention of the legislature and apex judiciary is desired to overhaul the legal regime on parentage determination. Survey of 2019 judgments on this issue is deliberated below has divulged that the constitutional courts, based on circumstances, have both permitted⁶⁶ and denied⁶⁷ DNA based paternity determination.

The legal convolutions evidently reflect in *G. Vasanthi v. M Muneeshwaran*,⁶⁸ wherein the high court observed, “... The presumption enshrined in Section 112 of the Indian Evidence Act, will not in any way be disturbed. Neither the result of the DNA test nor adverse inference can lead to dislodging the conclusive proof contemplated by section 112 of the Evidence Act, so long as it remains in the current un-amended form. The rights of the child shall remain insulated and protected. While the character of the mother may be exposed, the status of the child shall remain

of the child has demanded that its legitimacy should not be jeopardized. The issue of applicability of Section 112 has to be seen from a different trajectory than that in the decided cases; no decision, as yet, with a comparable fact-situation where the offspring of parents, born during the subsistence of their marriage, sought a paternity declaration that another man (and not his mother’s husband) was his father, is discernable. Therefore, where it can be established that the husband is not the father of the child, through scientific tests conducted upon them voluntarily, the presumption of Section 112 can stand rebutted, *prima facie*; *G. Ethiraj Naidu v. E. Suresh* 2019 SCC OnLine Mad 4201 : (2019) 3 MWN (Civil) 141 at para 11; and *Vinod v. Dhakshan* 2019 SCC OnLine Mad 5021, the high court, at para 6, held that “if the petitioner [father] herein is confident that he is not the father as alleged, it would also be appropriate for him to undergo DNA test to disprove the claim of the respondent herein”.

62 *Nandlal Wasudeo Badwaik v. Lata Nandlal Badwaik* (2014) 2 SCC 5762003 3 SCR 106: 2003 (2) UJ 870 SC.

63 *Dipanwita Roy v. Romobroto Roy* (2015) 1 SCC 365: (2015) 1 SCC (Cri) 683 : (2015) 1 SCC (Civ) 495 : 2014 SCC OnLine SC 831. Also see: *Jitendra Singh Kaurav v. Rajkumari Kaurav* 2019 (3) MPLJ 150. Non-access to wife at time of conceiving a child, considered ‘eminent ground’ for ordering the DNA test for paternity determination.

64 *Supra* note 62 at para 19.

65 *V. Manoharan v. Saranya* 2019 SCC OnLine Mad 14590.

66 *Vijay Kumar v. Renu* 2019 SCC OnLine Del 6458. Also see: *Rani v. Kalidas* 2019 SCC OnLine Mad 432; *Tarun Kumar Gadabad v. Subhalaxmi* 2019 SCC OnLine Ori 347 : AIR 2020 Ori 3 : (2020) 2025 AIC 617; *Jaswinder Pal Kaur v. Surjit Kaur (deceased) through L.R.s* 2019 SCC OnLine Punjab and Haryana 589 : (2019) 1 HLR 516; and *Parbati Chintadav. Gopal Krishna Chintada* 2019 SCC OnLine Ori 134: (2019) 198 AIC 806.

67 *Vikas Garg v. Beenu Garg* 2019 SCC OnLine Punjab and Haryana 830.

68 *G. Vasanthi v. M. Muneeshwaran* 2019 SCC OnLine Mad 1553 : 2019 AIR CC 2510 : (2019) 2 CTC 426 : (2019) 2 Mad LJ 498 : (2019) 2 MWN (Civil) 210 : (2019) 2 HLR 548 : (2019) 200 AIC 569.

unsullied in law. If the results of the DNA test deny the paternity of the child, it shall not be published. Just as the identity of a rape-victim and that of a juvenile in conflict with law is concealed, similar protective measures shall be taken in such cases”.⁶⁹

In *Bommi and Minor Sonia v. Munirathnam*,⁷⁰ it is held that “In matrimonial litigations, the blood test for a baby may not be passed, unless the court specifically addresses itself as to whether such test would be for the benefit of baby. For a child an adverse report may affect its future life. The welfare of baby of litigating parties is of paramount consideration”.⁷¹ This judgment follows the footprints of the *Gouatm Kundu*.⁷² On a similar line, High Court of Allahabad dismissed the appeal against the order of the court below where the husband demanded a DNA test to determine paternity of the child to get a decree of divorce.⁷³ The high court held that there is no allegation of infidelity on the part of the wife, and spouses have access to each other, hence the ratio of the *Dipanwita Roy* is of no help to the petitioner husband. In an appeal, High Court of Delhi ordered for conducting DNA to analyze entire genome sequence to resolve a dispute of inheritance, since few of decedents were already dead.⁷⁴ In a devolution and property relates dispute, the DNA test was denied by the high court on the ground that DNA may not prove the factum of marriage.⁷⁵ The high court, based on expert advice, observed that it is difficult to find out paternity of a person by DNA if both parents have died. At the most DNA may ascertain family tree, the court opined.⁷⁶

The legitimacy born out of love affair without marriage remains a socio-legal challenge to be addressed. High Court of Madras, in this regard, has observed:⁷⁷

What is to be noted from the legal position enunciated is that a child is born out of a marriage, which is *null* and *void*, under Section 11, is legitimate under Section 16 of the Hindu Marriage Act. The second half of the section says that “whether or not a decree of nullity is granted in respect of that matter under this Act and whether or not the marriage is held to be void otherwise than on a petition under this Act.” On a plain reading of the provision of Section 16, as amended in the year 1976, makes it apparent that the object of Section 16, of the Hindu Marriage Act, 1955, is to protect the legitimacy of the children born of

69 *Id.*, para 19.

70 2004 SCC OnLine Mad 542; (2005)1 LW713. Also see; *C.K.P. v. M.P.* 2019 SCC OnLine Del 8077 at para 1.

71 2004 (5) CTC 182; (2004) 3 MLJ 537 : (2005) 1 DMC 636.

72 *Supra* note 58. Also see: *Girish Chandra Srivastava v. Reeta Srivastava* 2019 SCC OnLine All 3554.

73 *Rajesh Kumar Chaudhary v. Sarita* 2019 SCC OnLine All 4422.

74 *Laxmi Devi v. Suresh Mendiratta* 2019 SCC OnLine Del 11833; (2020) 266 DLT 609.

75 *A. Chockalingam v. C. Chockalingam* 2019 SCC OnLine Mad 4113 at para 7.

76 *Murugan v. Deivanai* 2019 SCC OnLine Mad 7951 at para 3.

77 *Nagapatia Venkata Chalam v. Nagapatia Saroja* 2019 SCC OnLine AP 47 : (2019) 5 ALD 342, para 26. The court below ordered for conducting DNA for paternity determination, but petitioner did not turn up for submitting DNA samples, adverse inference was drawn by the court.

void or voidable marriages and that the benefit given under the amended Section 16 is available only in cases where there is a marriage and when such marriage is void or voidable in view of the provisions of the Act. Nonetheless, if there is no marriage, may be void or voidable, then, this benefit of deemed 'legitimacy' will not be available to the children, who are begotten out of any physical relationship of a man and a woman. Thus, Section 16 of the Hindu Marriage Act does not confer the benefit of legitimacy on a child born out of any physical relationship between a man and a woman, who are not married. Consequently, for the benefit of legitimacy to inure to such illegitimate child, such a child must have been born, after a marriage between his father and mother, whether void or voidable. In view of the facts and the legal position adverted to supra, we find that even the alternate contention of the petitioner that he is the illegitimate son of the deceased and his mother, *Shaik Shajadi Begum*, and hence, he is entitled to compassionate appointment does not come to his aid as from the facts borne out by the record it is noticeable that there is no marriage void or voidable between the deceased and the mother of the petitioner.

In *Rohit v. State of Maharashtra*,⁷⁸ an adult prosecutrix got impregnated and delivered a baby due to repeated sexual liaison with her neighbour and later a criminal case of rape was slapped on him. The DNA confirmed that the accused and prosecutrix are the biological parents of the new born. The trial court convicted him, but high court during appeal released him on bail. Despite the refusal of the prosecutrix to an offer made by the accused to marry him, the high court directed the *Sarpanch* of village and police to bring both parties before the court and to work out if they could enter into valid wedlock. In another matter, the high court dissolved the marriage by observing that the presumption of legitimacy under section 112 of the Evidence Act is a rebuttable presumption, if DNA report is unequivocal in its conclusion that the husband is not the natural father of the child.⁷⁹ High Court of Bombay imposed costs of Rupees 1 lakh and directed police to register a criminal case against the petitioner for abuse of legal process by filing a frivolous petition to hide the paternity of children in order to jump the ceiling of two children for contesting the election. For fear of true revelation of paternity by DNA, the respondent accepted his evil intent behind the petition.⁸⁰ In maintenance cases, the respondent-husband usually challenge the paternity of child and demand to conduct a DNA test to brace his contention.⁸¹

78 2019 SCC OnLine Bom 8535.

79 *K.S. Lakshmikantharaju v. Sowbhagya* 2019 SCC OnLine Kar 2182 at para 17.

80 *Surekha Mukund Dabhade v. State of Maharashtra* 2019 SCC OnLine Bom 1119. Also see: *Subhash Hanmantrao More v. State of Maharashtra* Writ Petition No. 6794/2017 decided on June 11, 2018.

81 *Parvesh Ch. Giri v. Banabala Sasmal* 2019 SCC OnLine Cal 1945. Also see: *Vijay Kumar v. Renu* 2019 SCC OnLine Del 6458; and *Shankarappa M. v. Mamtha D.* 2019 SCC OnLine Kar 253.

Paternity determination *vis-à-vis* the right to privacy

Paternity determination using DNA embroils privacy issues.⁸² It is observed that if both parties are consenting to give DNA samples, the court generally tenders permission to conduct DNA profiling for paternity determination during civil disputes resolution.⁸³ In *Mahesh Chand Sharma v. State of Rajasthan*,⁸⁴ the high court held the directions issued by the state government to conduct DNA unjustified and illegal, since invading the privacy of an individual as an infant whose DNA is sought to be conducted would not be in a position to give his consent.⁸⁵ In case a child is not a party to *lis* for paternity determination, then legal complexities arise if a child refuses to give DNA sample on the pretext of privacy. In *Ramakrishnan v. Mrinalini*, The High Court of Kerala has observed:⁸⁶

If the major children are not co-operating with the DNA test on the ground of privacy, reputation and dignity, what will be the consequence in the appreciation of evidence of the case had to be kept in mind while any order is passed. No adverse inference can be drawn in the given case as the contesting parties are the husband and wife and not the children. When the children are major, surely they cannot be compelled to give a blood sample in a civil proceeding where they were not parties. The case projected by the petitioner seems to be that if DNA test proves the petitioner is not the biological father of the said three children, the corollary is that the wife committed infidelity and there is adultery.

The high court also observed that “If the paternity of the children is the issue in the proceeding, a DNA test may be the only safe method. ... after the passage of a long time, the DNA test cannot be used as a short cut to establishing infidelity that might have occurred decades ago. Even an order to undergo DNA test itself may have its own effect on the reputation of the children in the society and it is also to be considered that they are major children born during the existence of a valid marriage, who are not a party to the original proceeding.”⁸⁷ DNA based paternity determination, however, largely depends on judicial discretion, but it necessitates a socio-psychological understanding of the issue.

Paternity disputes to get a job on compensatory grounds

The apex court dealt an appeal pertaining to ordering DNA test for identifying a person who has allegedly impersonated himself as schedule caste in order to obtain

82 *K.S. Puttaswamy v. Union of India* (2017) 10 SCC 1, Nine Judges Bench of the Supreme Court unanimously held that right to privacy is a fundamental right, but left the conclusions set out in para 81 in *Sharda v. Dharmpal* [(2003) 4 SCC 493 :AIR 2003 SC 3450] untouched.

83 *Durgesh Kumar v. State of Bihar* 2019 SCC OnLine Pat 1992.

84 S.B. Civil WP No. 2067/1999, High Court of Rajasthan, decided on Mar. 7, 2019.

85 *Mahendra Meena v. Mamta @ Guddi* 2019 SCC OnLine : 2019 (2) RLW 1632 : AIR 2019 Raj 126.

86 2018 SCC OnLine Ker 2168 at para 7: (2018) 3 KLJ 531: AIR 2019 (NOC 255) 84: 2018 (3) KLT 5: (2018) 3 ICC 806 : (2018) 191 AIC 713. Also see: *Radhakrishnan v. Indu* 2018 SCC OnLine Ker 2771: (2018) 3 KLJ 903: (2018) 4 ICC 794 (DB) : 2018 (3) KLT 664.

87 *Id.* at 8. Also see: *Sindhu v. Nagendran* 2019 SCC OnLine Ker 2635: AIR 2020 Ker 63: (2019) 4 KLT (SN 17) 11.

a fake caste certificate by changing his and his father's names.⁸⁸ FIR was lodged into the matter, and the district court on the request of investigating officer permitted to conduct a DNA test of the subject along with his parents and siblings to ascertain the genuineness of his identity. The impugned order was challenged under section 482 of the procedure code but was dismissed by the high court, therefore the door of the apex court was knocked. The apex court ordered that without substantial investigation, conducting DNA test is nothing but a step towards robing and fishing inquiry on a person and his family members. The apex court held that "It shall, however, be open for the court concerned to consider the request for conducting DNA test on there being sufficient materials on records to take any such decision".⁸⁹

VI JUDICIAL RESPONSE ON CRIME

Adjudication of crime compels 'proving guilt beyond reasonable doubt', based on the high standard of evidence to establish 'truth' behind a fact. During this survey, various courts have deliberated on legal issues pertaining to different forensic evidence, which have been succinctly accounted below.

Sanctity of forensic samples: Chain of custody

The inviolability of forensic sample is of utmost importance in the courtroom and any doubt may result in nullity of the expert opinion.⁹⁰ The chain of custody of the forensic sample helps to ensure the admissibility of expert opinion.⁹¹ The article or place from where the forensic samples gets lifted needs proper seizure documentation along with photography or videography to establish the genuineness of sampling. The apex court in *Jitendra Gabhane v. State of Maharashtra* observed that "If the DNA report is absolutely dented and it is established that there has been no quality control or quality assurance and if the sampling has been improper and that there is evidence to show tampering of the samples, the DNA test report would be unsafe to be made a basis for convicting the accused"⁹² Thus, "before any reliance can be placed on a DNA test, it is necessary for the prosecution to establish the purity of the process of leading to the collection of the sample and testing of the sample."⁹³

DNA report was discarded by the high court in an appeal resulting in the reversal of the conviction order since samples were collected in DNA kits by a medical doctor who was not examined during the trial. In this case, the prosecutrix was eight years old and medical report had shown injuries on private parts including torn hymen

88 *Kathi David Raju v. State of Andhra Pradesh* (2019) 7 SCC 769.

89 *Id.*, para 13.

90 *Snehal Das v. State of Maharashtra* 2019 SCC OnLine Bom1535: (2019) 3 AIR Bom R (Cri) 296 at para 37.

91 GK Goswami, "Management of DNA Sampling in Rape Incidents" (2018) 7 SCC J-4. Also see: *Pravin v. State of Maharashtra* 2019 SCC OnLine Bom 368 : (2019) 2 AIR Bom R (Cri) 70.

92 *Jitendra Gabhane v. State of Maharashtra* 2017 SCC OnLine Bom 8600 : (2017) 3 AIR Bom R (Cri) 786 at para 22.

93 *Snehal Dias v. State through P.P. High Court Bombay at Panaji Goa* 2019 SCC OnLine Bom 1523 : (2019) 3 AIR Bom R (Cri) 296 at para 18.

perineum and torn wound *introitus* in the inner region.⁹⁴ No plausible reason for discarding DNA opinion was raised by the court. After detailed discussion on the admissibility of DNA evidence, High Court of Uttarakhand has posed certain questions for the trial court to satisfy itself about the accuracy of the DNA report.⁹⁵

Cross-examination of expert witness

It is pertinent to record that "... in case a question was not put to the witness during the cross-examination, who could have furnished an explanation on a particular issue, then the correctness and legality of the said issue cannot be raised later on".⁹⁶ This legal surmise applies to expert opinion as well.⁹⁷

Non-conducting forensic tests: Adverse presumption against prosecution

The courts take an adverse view under section 114(g) of the Indian Evidence Act, 1872 if the prosecution withholds the best evidence from the court because it would be unfavourable against the prosecution case.⁹⁸ In rape cases, the accused also take non-conducting of DNA test as a plea of defense.⁹⁹ Although courts are not giving importance to such arguments; however, equity demands that an accused must be enabled, as a matter of right, to demand for conducting DNA and other forensic tests in order to prove his innocence. The inconclusive DNA report may also be projected to favour the accused by the defense lawyer,¹⁰⁰ however, it depends on various factors

94 *Nagesh v. State of Maharashtra* 2019 SCC OnLine Bom 342 at para 33.

95 *State of Uttarakhand v. Akhtar Ali* 2019 SCC OnLine Utt 1558, at para 86, the high court listed the questions:

(i) Is the expert, in fact, an expert? His educational qualification and training experience in the relevant field? Even if, it is in a little detail, it should be recorded? (ii) How was it ensured that the samples were intact and not degraded for conducting the test? (iii) The available methodology for conducting the test? The advantage and disadvantage of each one of them? (iv) Why a particular method was followed by the expert? Its advantages? (v) What were the chances of contamination? And, how it was ensured that the samples are contamination free? What processes were adopted to ensure it? (vi) What precautions were required to be taken in the examination? How was it ensured?

96 *Arshad Ali alias Munna Khan v. State (NCT of Delhi)* 2019 SCC OnLine Del 6681 : (2019) 257 DLT 112 (DB). Also see: *Mahavir Singh v. State of Haryana* (2014) 6 SCC 716; *Atluri Brahmamandam v. Anne Sai Bapuji* (2010) 14 SCC 466; *Laxmibai v. Bhagwantbuva* (2013) 4 SCC 97.

97 *Id.* at para 30. Also see: *Navin Laxman Tamboli v. State of Maharashtra* 2018 SCC OnLine Bom 4325.

98 *Tomaso Burno v. State of Uttar Pradesh* (2015) 7 SCC 178; (2015) 3 SCC (Cri) 54 : 2015 SCC OnLine SC 52. The court observed that "... Notwithstanding the fact that the burden lies upon the accused to establish the defence plea of alibi in the facts and circumstances of the case, in our view, the prosecution in possession of the best evidence, CCTV footage ought to have produced the same. In our considered view, it is a fit case to draw an adverse inference against the prosecution under Section 114 Illustration (g) of the Evidence Act that the prosecution withheld the same as it would be unfavorable to them had it been produced" (para 28). Also see: *Girish Chandra Bajpayee v. State of Uttar Pradesh* 2019 SCC OnLine All 5595 at para 52; *Rupesh v. State of Maharashtra* 2019 SCC OnLine Bom 70: (2019) 1 AIR Bom R (Cri) 881 at para 50; and *Nikhil Saxena v. State (NCT of Delhi)* 2019 SCC OnLine Del 11803.

99 *Aamir Khan v. State of Madhya Pradesh* 2019 SCC OnLine MP 162.

100 *Lokesh v. State (NCT of Delhi)* 2019 SCC OnLine Del 8917: (2019) 261 DLT (DB).

such as time gap between the incident of rape or other bodily offences and collection of samples (vaginal or/and anal swab, pubic hairs), bathing and urination by the victim or the accused.

Medico-legal tests

In *Nagindra Bala Mitra v. Sunil Chandra Roy*,¹⁰¹ the apex court propounded that “Further, the value of a medical witness is not merely a check upon the testimony of eyewitnesses; it is also an independent testimony, because it may establish certain facts, quite apart from the other oral evidence”. In rape cases, “the presence of injury is not a *sine qua non* for the credibility of the words of prosecutrix about sexual assault...”¹⁰² However, nature of injuries fortify the force of allegations in bodily offences including rape. The High Court of Gujarat has deliberated upon the legality of confession of guilt by an accused before a medical officer for committing rape upon a minor.¹⁰³

High Court of Himachal Pradesh observed that “Medical evidence is a corroborative piece of evidence to strengthen the case based on the substantive evidence and in absence of cogent and credible substantive evidence, medical evidence cannot be made the basis for recording a conviction. However, if there is any inconsistency in medical evidence, but there is tangible and reliable substantive evidence on record, a conviction can be recorded on the basis of substantive evidence irrespective of nature of medical evidence unless medical evidence on record rules out the prosecution case in its entirety. In the instant case, a claim of prosecutrix became doubtful not only by the medical evidence but on account of discrepancies in her own changing versions during different depositions”.¹⁰⁴ The apex court in catena of cases has stressed that the seminal stain is not *sine qua non* for conviction in allegations of rape.¹⁰⁵ During a medical examination, biological samples like DNA are also collected for forensic analysis.

DNA Profiling: A potent evidentiary tool

Ever since DNA entered the courtroom in a spectacular manner in 1986, it has emerged as ‘golden genetic evidence’, particularly for solving body offences like rape and murder and also paternity determination. In the extant survey, it is seen that

101 AIR 1969 SC 706 at para 43. Also see: *Joseph Mathal v. State of Kerala* 2019 SCC OnLine Ker 5133 at para 39.

102 *Supra* note at para 43. Also See: *Pratap Mishra v. State of Orissa* (1977) 3 SCC 41; *Lalliram v. State of Madhya Pradesh* (2008) 15 SCC 133; *Rai Sandeep @ Deepu v. State (NCT of Delhi)* (2008) 15 SCC 21; *Mohammad Abrar v. State of Uttar Pradesh* 2019 SCC OnLine All 5773 at para 22; *Lourdhe v. State represented by the Inspector of Police* 2019 SCC OnLine Mad 5524; and *Imran v. State (NCT of Delhi)* 2019 SCC OnLine Del 9783.

103 *Anil Surendra Singh Yadav v. State of Gujarat* 2019 SCC OnLine Guj 2692.

104 *Bobby Bhumak v. State of Himachal Pradesh* 2019 SCC online HP 2137 at para 46.

105 *State of Uttar Pradesh v. Babul Nath* (1994) 6 SCC 29 para 8; 1994 SCC (Cri) 1585 : JT 1994 (5) 105. Also see: *Dal Chandra v. State of Utrakhand* 2918 SCC OnLine Utt 612; *Parminder @ Ladka Pola v. State (NCT of Delhi)* (2014) 2 SCC 592; (2014) 4 SCC (Cri) 74 : 2014 SCC OnLine SC 37; and *Wahid Khan v. State of Madhya Pradesh* (2010) 2 SCC 9 : (2010) 1 SCC (Cri) 1208.

DNA evidence has been used in a plethora of criminal cases in order to facilitate justice.¹⁰⁶ The evidentiary forte of DNA has been highly appreciated by the courts,¹⁰⁷ which helped in the identification of dead bodies,¹⁰⁸ solving murder mysteries,¹⁰⁹ linking offenders of rape,¹¹⁰ and other bodily offences with credible probity. DNA, in a few

- 106 *Dattatraya alia Datta Ambo Rokade v. State of Maharashtra* 2019 SCC OnLine SC 1181.
- 107 *Ravishankar alias Baba Vishwakarma v. State of Madhya Pradesh* (2019) 9 SCC 689; (2019) 3 SCC (Cri) 768 : 2019 SCC OnLine SC 1290, the apex court observed that “DNA typing carries high probative value for scientific evidence, is often more reliable than ocular evidence. It goes without saying that in (i) *Pantangi Balarama Venkata Ganesh v. State of A.P.* (2009) 14 SCC 607 : (2010) 2 SCC (Cri) 190, and (ii) *DharamDeo Yadav v. State of U.P.* (2014) 5 SCC 509 : (2014) 2 SCC (Cri) 626, this court has unequivocally held that DNA test, even if not infallible, is nearly an accurate scientific evidence which can be a strong foundation for the findings in a criminal case”.
- 108 *Sunita v. State of Haryana* (2019) 14 SCC 258. Also see: *Dattatrya @ Datta Ambo Rokade v. State of Maharashtra* 2019 SCC OnLine SC 1181; *Manoharan v. State of Tamil Nadu* 2019 SCC OnLine SC 1433; *State (NCT of Delhi) v. Ashish @ Nirmal* 2019 SCC OnLine Del 6923 at para 17; *Binod Das v. State of West Bengal* 2019 SCC OnLine Cal 6454; *Sachin v. State (NCT of Delhi)* 2019 SCC OnLine Del 10714; *Cheluvi v. State of Kerala* 2019 SCC OnLine Ker 1121 at para 15 : (2019) 198 AIC 921 : 2019 Cri LJ (NOC 290) 100; and *Meera Devi v. State (NCT of Delhi)* 2019 SCC OnLine Del 11325.
- 109 *Supra* note 96. Also see: *State (NCT of Delhi) v. Damodar* 2019 SCC OnLine Del 8343; *Dhanesh v. State (NCT of Delhi)* 2019 SCC OnLine Del 9107; *Vinod Rana v. State (NCT of Delhi)* 2019 SCC OnLine Del 9208 at para 39; *Sachin v. State (NCT of Delhi)* 2019 SCC OnLine Del 10474; *Nikhil Saxena v. State (NCT of Delhi)* 2019 SCC OnLine Del 11803; *Sanjaybhai Ranchhodhbhai Samadiya v. State of Gujarat* 2019 SCC OnLine Guj 1006 at para 6, wherein DNA analysis conducted on the remains of dried vomit found on the seat of a car of the accused matched with the deceased the deceased; *Amar Bahadur v. State of Himachal Pradesh* 2019 SCC OnLine HP 467; *Natrajan v. State of Tamil Nadu* 2019 SCC OnLine Mad 9840; *Janardhan Kokre v. State of Maharashtra* 2019 SCC OnLine Bom 118 : (2019) 1 AIR Bom R (Cri) 625; *Khushi Ajay Sahjwani v. State of Maharashtra* 2019 SCC OnLine Bom 5370; *Dattatraya Vitthal Dhamal v. State of Maharashtra* 2019 SCC OnLine Bom 1312; *Vajunder Paul v. U.T. Chandigarh* 2019 SCC OnLine P and H 2482; *State of Rajasthan v. Mod Singh* 2019 SCC OnLine Raj 756; and *Polepaka Praveen v. State of Telangana* 2019 SCC OnLine TS 2090 : (2020) 1 ALT (Cri) 139 (DB).
- 110 *Manoharan v. State by Inspector of Police, Coimbatore, Tamil Nadu* (2019) 7 SCC 716 para 63; *Ravishankar alias Baba Vishwakarma v. State of Madhya Pradesh* (2019) 9 SCC 689 : (2019) 3 SCC (Cri) 768 : 2019 SCC OnLine SC 1290 para 34; *Manoharan v. State represented by Inspector of Police, Coimbatore* 2019 SCC OnLine SC 1433 para 55; *Akshay Kumar Singh v. State (NCT of Delhi)* 2019 SCC OnLine Del 1653 para 4(v); [*Nirbhaya* Gang rape case. Other connecting cases: *Mukesh v. State (NCT of Delhi)* (2018) 8 SCC 186; and *Vinay Sharma v. State (NCT of Delhi)* (2018) 8 SCC 186]; *State (NCT of Delhi) v. Radhey Shyam Mishra* 2019 SCC OnLine Del 6833 : (2019) 257 DLT 235 (DB); *Shamsherv. State (NCT of Delhi)* 2019 SCC OnLine Del 8246 at para 10; *Pravesh Dixit v. State (NCT of Delhi)* 2019 SCC OnLine Del 8394 at para 46; *Smabhu Yadav v. State (NCT of Delhi)* 2019 SCC OnLine Del 8687 at para 18 : (2019) 260 DLT (DB); *Shiva v. State (NCT of Delhi)* 2019 SCC OnLine Del 8955 at para 57 : (2019) 262 DLT 221; *Pilluwa v. State (NCT of Delhi)* 2019 SCC OnLine Del 9087; *Devanand v. State (NCT of Delhi)* 2019 SCC OnLine Del 9684 at para 20; *Imran v. State (NCT of Delhi)* 2019 SCC OnLine Del 9783; *Rabbu alias Sarveshv. State of Madhya Pradesh* 2019 SCC OnLine MP 161; *Affjal Khan v. State of Madhya Pradesh* 2019 SCC OnLine MP 1672 : 2019 Cri LJ 5003; *Lakpa Dorjee Tamang v. State of Sikkim* 2019 SCC OnLine Sikk 7 : 2019 Cri LJ 2225; and *Anil Surendrasing Yadav v. State of Gujarat* 2019 SCC OnLine 2692.

cases, also helped to establish the innocence of the accused.¹¹¹ However, despite having available crime-related biological contents, DNA technology has not been utilized in the majority of crime investigation; and this point has been raised by the appellate courts,¹¹² and defense lawyers have demanded for drawing adverse inference against the persecution.¹¹³ If a prosecutrix avoids giving DNA sample, it casts grave doubt on her conduct.¹¹⁴ Sometimes, the DNA report also became a strong ground for granting¹¹⁵ or refusing¹¹⁶ bails to the accused mainly for body offences. Hairs may also be a source of DNA. In *Manoharan v. State by Inspector of Police, Coimbatore*,¹¹⁷ the hairs found in the underwear of prosecutrix were used for DNA collection resulting into a credible piece of evidence.

- 111 *State (NCT of Delhi) v. Sanjay* 2019 SCC OnLine Del 8576 at para 18 : (2019) 200 AIC 343 : (2019) 261 DLT (DB); *State (NCT of Delhi) v. Tufail* 2019 SCC OnLine Del 9159 at para 8; *State (NCT of Delhi) v. Talib* 2019 SCC OnLine Del 11473; *State (NCT of Delhi) v. Abbas* 2019 SCC OnLine Del 11475; *State (NCT of Delhi) v. Soniya* 2019 SCC OnLine Del 11474; *Ajit Kumar Kumarsinh Bhagora v. State of Gujarat* 2019 SCC OnLine Guj 1747 : (2019) 2 GLH 653 : (2020) 61 (1) GLR 27 at para 62; *Praveen Kumar Jaiswal v. Union of India* 2019 SCC OnLine Jhar 389 at para 6, in this case the accused was reinstated in his government service since DNA proved that the accused was not biological father of rape related child. In *Union Territory, Chandigarh Administration v. Pradeep Kumar* (2018) 1 SCC 797, the apex court held that when there is honourable acquittal, the person can be reinstated in service; *Amrit Bindu v. State of Madhya Pradesh* 2019 SCC OnLine MP 2756; *Dipak v. State of Maharashtra* 2019 SCC OnLine Bom 4680 at para 41; and *State of Sikkim v. Girijaman Rai* 2019 SCC OnLine Sikk 50 at para 8;
- 112 *Md. Mannan @ Abdul Mannan v. State of Bihar* 2019 SCC OnLine SC 737; *Shailendra Rajdev Pasvan v. State of Gujarat* 2019 SCC OnLine SC 1616 para 11; *Prem Bahadur v. State (NCT of Delhi)* 2019 SCC OnLine Del 9239 at para 33; (2019) 263 DLT 24; *State of Gujarat v. Sambhubhai Raisangbhai Padhiyar* 2019 SCC OnLine Guj 1430; *Rakesh Shah v. State of Himachal Pradesh* 2019 SCC OnLine HP 1075 at para 46, *Podimonv. State of Kerala* 2019 SCC OnLine Ker 443 at para 5 : (2019) 196 AIC 811 : (2019) 2 KLT (SN 63) 53; *State of Maharashtra v. Santosh Vishnu Lonkar* 2019 SCC OnLine Bom 2932 para 51; *Vijay Ramrao Mohod v. State of Maharashtra* 2019 SCC OnLine Bom 1015 : (2019) 2 AIR Bom R (Cri) 875, the high court cited *Vijayan v. State of Kerala* (2008) 14 SCC 783, held that "...therefore absence of the DNA report plays pivotal role in this case [for acquittal]"; and *Mamtav. State of Rajasthan* 2019 SCC OnLine Raj 2194 at para 5, the high court upheld the order of acquittal in murder case after observing at para 5, "... failure of prosecution to get the DNA test was considered to be fatal regarding identification of the dead body."
- 113 *Id.* at para 55. Also see: *Kalu Khan v. State of Rajasthan* (2015) 16 SCC 492; and *Santosh Kuma Satish Bhushan Bariyar v. State of Maharashtra* (2009) 6 SCC 498.
- 114 *Biju v. State of Kerala* 2019 SCC OnLine Ker 7770; (2020) 1 KLJ 780.
- 115 *Sunny Bramha Bagadi v. State of Maharashtra* 2019 SCC OnLine Bom 5342 at para 5; and *Mohammad Arif Istiyak Ali Shah v. State of Maharashtra* 2019 SCC OnLine Bom 7788 at para 4.
- 116 *Samadhan Kashinath Borkar v. State of Maharashtra* 2019 SCC OnLine Bom 4519 at para 4; *Hemudan Nanbha Gadhvi v. State of Gujarat* 2018 SCC OnLine 1688; *Rohan v. State of Maharashtra* 2019 SCC OnLine Bom 4940 at para 6; *Santosh Dhondiram Kende v. State of Maharashtra* 2019 SCC OnLine Bom 7319 at para 5; *Ramjan Khalil Patel v. State of Maharashtra* 2019 SCC OnLine Bom 8110 at para 3; and *Shivarathi Anjaneyulu v. State of Telangana* 2019 SCC OnLine TS 2292;
- 117 (2019) 7 SCC 716 at para 61 : (2019) 3 SCC (Cri) 337 : 2019 SCC OnLine SC 951.

Evidentiary strength of DNA: Judicial appreciation

DNA, worldwide, is considered having a corroborative evidentiary value of high credence. In this regard, the apex court observed:¹¹⁸

Like all other opinion evidence, the probative value accorded to DNA evidence also varies from case to case, depending on the facts and circumstances and the weight accorded to other evidence on record, whether contrary or corroborative. This is all the more important to remember, given that even though the accuracy of DNA evidence may be increasing with the advancement of science and technology with every passing day, thereby making it more and more reliable, we have not yet reached a juncture where it may be said to be infallible. Thus, it cannot be said that the absence of DNA evidence would lead to an adverse inference against a party, especially in the presence of other cogent and reliable evidence on record in favour of such party.

Emphasizing on the significance of DNA evidence, the High Court of Kerala has observed, “The most important evidence is the scientific material that is available before court *viz.*, the report of DNA typing which was conducted by scientific experts. The DNA found in the spermatozoa which were taken from the vagina matched with the DNA profile of the accused. This evidence clearly proves that the accused committed rape on the victim”.¹¹⁹ High Court of Madhya Pradesh, acknowledging the strength of genetic evidence, has issued directions to police for conducting DNA test during investigation of allegations of rape and rape-related pregnancy.¹²⁰

118 *Pattu Rajan v. State of Tamil Nadu* (2019) 15 SCC 771 at para 52 : (2019) 2 SCC (Cr) 354 : 2019 SCC OnLine SC 444. Also see: *Mukesh v. State (NCT) of Delhi* (2017) 6 SCC 1 at para 216; and *Pankaj v. State of Himachal Pradesh* 2019 SCC OnLine HP 991: 2020 Cri LJ 526; The Chief Justice Roberts of the Supreme Court of United States, in *Third Judicial District v. William G. Osborne* 557 U.S. 52 (2009) spoke that “DNA testing has an unparalleled ability both to exonerate the wrongly convicted and to identify the guilty. It has the potential to significantly improve both the criminal justice system and police investigative practice.”

119 *State of Kerala v. Rajesh Kumar @ Rajesh* 2019 SCC OnLine Ker 43 at para 28: 2019 Cri LJ 2081 : (2019) 1 KLT (SN 41) 28. Also see: *Mahendra Singh God v. State of Madhya Pradesh* 2019 SCC OnLine MP 200; and *Kamal Kumar v. State of Himachal Pradesh* 2019 SCC OnLine HP 1608. Supreme Court in *Krishan Kumar Malik v. State of Haryana* [(2011) 7 SCC 130] regarding provisions under the procedure code for conducting DNA test, at para 44, has observed, “Now, after the incorporation of Section 53(A) in the Criminal Procedure Code, *w.e.f.* June 23, 2006, brought to our notice by learned counsel for the Respondent-State, it has become necessary for the prosecution to go in for DNA test in such type of cases, facilitating the prosecution to prove its case against the accused. Prior to 2006, even without the aforesaid specific provision in the Criminal Procedure Code prosecution could have still resorted to this procedure of getting the DNA test or analysis and matching of semen of the appellant with that found on the undergarments of the prosecutrix to make it a fool proof case, but they did not do so, thus they must face the consequences”.

120 *Raja Burman @ Rahul v. State of Madhya Pradesh* 2016 SCC OnLine MP 11948 at 155, para 8 : (2016) 3 RCR (Cr) 155. Also see: *Surajpal Adiwasi v. State of Madhya Pradesh* 2019 SCC OnLine MP 1897. The high court held that:

It has been seen that in number of cases relating to rape, the most powerful investigative tool which is available to the police is the DNA test which is seldom being resorted to.

The High Court of Bombay in *Pravin v. State of Maharashtra*¹²¹ has observed, “DNA, a modern scientific technique is very useful and helpful not only for investigators but also for Courts to reach to the truth. DNA, in my view, conclusively shows the finger of the guilt towards the perpetrator of the crime”. The apex court in *Patangi Balarama’s case*¹²² recorded words of caution with the observation that, “there cannot be any doubt whatsoever that there is a need of quality control. Precautions are required to be taken to ensure preparation of high-molecular-weight DNA complete digestion of the samples with appropriate enzymes, and perfect transfer and hybridization of the blot to obtain distinct bands with appropriate control”.¹²³

Interestingly, in a case where a 10 years old boy was kidnapped and murdered in 1981, the skeletal remains were collected, and medical expert ascertained the age of deceased between 10 to 14 years. In an appeal filed by the convicts, the high court in 2019 has observed that “... the DNA test was required to be conducted, to establish beyond doubt that the said bones were of Ram Bharose [the deceased]...”¹²⁴ Accordingly, the conviction under section 302/201 of penal code was set aside by the high court, however, a conviction for kidnapping was upheld.¹²⁵ DNA fingerprinting technique was invented by Pro. Alec J. Jefferys in 1986, so it was not feasible to conduct identification of deceased by DNA unless the seized artefacts were preserved for conducting DNA at a later stage.¹²⁶

Significance of Y-STR method for DNA profiling

The apex court has underpinned the importance of DNA by observing, “... in cases of sexual assault, DNA of the victim and the perpetrator are often mixed. Traditional DNA analysis techniques like “autosomal-STR” are not possible in such cases. Y-STR method provides a unique way of isolating only the male DNA by comparing the Y-chromosome which is found only in males. It is no longer a matter of scientific debate that Y-STR screening is manifestly useful for corroboration in

The DNA report can either confirm or exclude the involvement of the accused. The police is directed that in every case under Section 376 of I.P.C. :

- (a) under which the doctor preparing the MLC of the prosecutrix prepares vaginal slides and clothing of the prosecutrix, which upon test by the FSL confirms the presence of human sperm then such slides must then be sent for DNA verification with the blood sample of the suspect.
- (b) where the prosecutrix is rendered pregnant on account of the rape and if birth takes place, then a DNA verification be sought to ascertain paternity of the child which will again either confirm or exclude the suspect. If the foetus is aborted, then the tissue sample of the foetus be tested along with the sample of the suspect to see if they match, and
- (c) in the event of the death of the prosecutrix during pregnancy, then also procedure enunciated in (b) to be followed.

121 2019 SCC OnLine Bom 368 : (2019) 2 AIR Bom R (Cri) 70.

122 *Patangi Balarama Venkata Ganesh v. State of Andhra Pradesh* (2009) 14 SCC 607: (2010) 2 SCC (Cri) 190.

123 *Supra* note 121 at para 38.

124 *Babua v. State of UP* 2019 SCC OnLine All 5446: (2019) 4 ALL LJ 588 : (2019) 109 ACC 752 at para 46.

125 *Ibid.*

126 Nick Zagorski, “Profile of Alec J. Jeffreys” 103(24) *Proc Natl Acd Sci USA* 8918-8920 (2006).

sexual assault cases and it can be well used as exculpatory evidence and is extensively relied upon in various jurisdictions throughout the world".¹²⁷

In a serial cold case of UK where four females in separate incidents were sexually assaulted and murdered, extradition of the accused residing in India, was sought. The extradition order was challenged in the high court, which got dismissed.¹²⁸ Indeed, the poster of suspect and CCTV footage gave some clue to the UK Police. The DNA sample was collected from a water bottle used by the brother (X) of the suspect. Sibship testing and subsequent Y-STR profiling conducted by another scientist supported that crime stain originated from the full sibling of X.

Delay in the collection of DNA sample

Section 53A of Cr PC empowers law enforcement agencies to collect a DNA sample from an accused of sexual offence at the time of medical examination. The accused usually contest if asked to submit DNA samples at subsequent stage. In *Omprakash @ Ricky Choudhary v. State of Madhya Pradesh*,¹²⁹ the accused challenged the order of the trial court to submit DNA sample. At the stage of the trial, FSL report was received revealing human spermatozoa in the vaginal swab, thus prosecution demanded order to give DNA sample of the accused to serve the interest of justice. The appellant accused argued that the proceedings for DNA matching should have been undertaken during the stage of the investigation, and no attempt was made by police to conduct DNA test at that stage. The accused further labelled such attempt of prosecution as an afterthought, amounting to reopening investigation in the belated stage of the trial. The high court cited a few case laws¹³⁰ and set aside the order of the trial court to conduct a DNA test. It is humbly observed that in this case, the trial court ordered for collecting blood for DNA matching with the vaginal swab of the

127 *Ravi v. State of Maharashtra* (2019) 9 SCC 622 at 643 and para 36 : 2019 SCC OnLine SC 1288 : (2019) 3 SCC (Cri) 723.

128 *Aman Vyas v. Union of India* 2019 SCC OnLine Del 9168 at para 8: 2020 Cri LJ 695. Also see: *Ram v. Mahbubani* 2008 SCC OnLine Del 1048 at para 37.

129 2019 SCC OnLine MP 271. Also see: *Dheeraj Gada v. State of Madhya Pradesh* 2015 (3) JLL 314.

130 *Niyaz v. State of Madhya Pradesh* M.Cr.C. No. 74/2017, High Court of Madhya Pradesh decided on Feb. 3, 2017. The high court observed that: Although DNA is relatively stable. It is most likely that forensic samples collected from a rape victim will yield results, however, time factors, chemical factors (such as washing using soaps and detergents), external factors (such as temperature and humidity) and internal factors (other bodily fluids) may affect the validity of a sample. The earlier samples are collected and tested the higher the chances of yielding solid, reliable results. The following are just some guidelines as to how long different DNA samples may remain viable:

(i) DNA from fingers in vagina - up to 12 hours; (ii) DNA from a penis most likely to obtain a profile from the victim within the first 12 hours; (iii) DNA from skin to skin contact (e.g., on bruises, or from kissing) can be detected up to two days. This includes detection of body fluids, cellular material and lubricant. If by chance, the person has not bathed or showered then the forensic science service says that the relevant area can be swabbed up to seven days after the incident; (iv) Fingernail scrapings - two days; (v) Oral (saliva and mouth swabs) - two days; (vi) Lubricant from a condom - up to 30 hours; (vii) Anal - up to three days; (viii) Vaginal - up to seven days; and (ix) Fibers of anything put on the head can last up to seven days.

prosecutrix. The high court referred to the *Niyaz* case, which dealt with the collection of possible biological samples from the accused just after the incident. DNA testing indeed would have helped in advancing justice by either convicting the accused if DNA matched or by proving innocence of the accused if DNA exculpated his involvement. In some cases, the accused offered to conduct DNA to prove innocence.¹³¹ It is time to enable the accused to exert his right to get a DNA test done to prove his innocence. This right may arrest the cherry-picking propensity of an investigator to conduct DNA to avoid collection of exculpatory evidence. Delay in furnishing the DNA report by itself cannot make the report apprehensible.¹³²

Exoneration despite matching DNA report

The conviction order of the trial court was reversed by the high court despite matching DNA report in a case of rape committed on a young girl while she was returning in the night and the accused gave her lift on his motorcycle to drop at her residence.¹³³ He allegedly raped her by threatening to stab her and the incident was reported to the nearest police station within an hour. Judgment has no mention of the claim by the accused of having consensual sex. The appellate court held that the prosecutrix has taken lift on her volition and she had the opportunity to extricate herself from the clutches of the accused, hence the allegations are suspicious. However, no reason is given in the judgment for absolving him from matching DNA if he had not claimed consensual sex. In *Anil Kumar v. State (NCT of Delhi)*,¹³⁴ the DNA report from the undergarment of the child was negative, however, DNA from the blood sample collected from the *niwar* of the cot on the crime scene and the failure of the accused to explain how the blood of the prosecutrix was found upon the cot placed in his tenant's room so supported the version of the prosecutrix, hence the appeal against conviction was dismissed. In yet another case, the conviction order was reversed by the High Court of Himachal Pradesh on the grounds that prosecutrix has not supported the case despite the DNA report of vaginal swab matched with the sample of accused of gang rape.¹³⁵ There was no argument of consensual sex and the question remained mute as to how semen of accused could be traced in the swab. The state filed an appeal against acquittal order in *State (NCT of Delhi) v. Pankaj Bansal*,¹³⁶ where a 15

131 *Banti v. State of Madhya* 2019 SCC OnLine MP 1903; and *Shubham Chahar v. State of Madhya Pradesh* 2019 SCC OnLine MP 3665.

132 *Dharmendra Kumar Tandon v. State (NCT of Delhi)* 2019 SCC OnLine Del 10098 at para 61.

133 *Dattatray alias Kashinath Babaso Khatai v. State of Maharashtra* 2019 SCC OnLine Bom193 : (2019) 2 AIR Bom R (Cri) 51. Also see: *Pravin v. State of Maharashtra* 2019 SCC OnLine Bom 368 : (2019) 2 AIR Bom R (Cri) 70; and *Samudersingh Mahipal Singh v. State of Maharashtra* 2019 SCC OnLine Bom 685 : (2019) 2 AIR Bom R (Cri) 443, the high court upheld the conviction order on the strength of forced sexual intercourse and indicting DNA matching, also the accused (boyfriend of prosecutrix) has not claimed consensual sex.

134 2019 SCC OnLine Del 11507.

135 *Pankaj v. State of Himachal Pradesh* 2019 SCC OnLine HP 1440.

136 *State (NCT of Delhi) v. Kaisher Ali* 2019 SCC OnLine Del 9875 at para 13. Also see: *Kusum Sharma v. State (NCT of Delhi)* 2019 SCC OnLine Del 10508; *State (NCT of Delhi) v. Pankaj Bansal* 2019 SCC OnLine Del 1099; *Ghure Lal v. State of Uttar Pradesh* (2008) 10 SCC 450 at para 69; and *Niraj v. Ramesh Pratap Singh* 2012 SCC OnLine Del 3813 at para 6.

years old girl got impregnated after sexual abuse and DNA matched with the criminal. The high court upheld the order of acquittal since prosecutrix got hostile and subsequently married the rapist.

Incest, rape related pregnancy and its termination

It is sardonic to record that females, especially minors, are more prone to sexual abuse by family members including father¹³⁷ and other acquainted persons.¹³⁸ In case of the victim and accused of rape, belonging to the same family and residing together, even the matching DNA also was not accepted as clinching evidence and conviction order of the trial court was reversed to acquit the accused father, on the strength of other evidence.¹³⁹ Disability further enhances the vulnerability of victims of rape and other offences. It is observed that mentally challenged victims of rape are unable to report timely and suffer from pregnancy and are often compelled to deliver the child due to late detection of pregnancy.¹⁴⁰

DNA test report, linking foetus/child with prosecutrix and the accused as parents only help to determine parentage and cannot be extrapolated to establish sexual crime *per se*.¹⁴¹ However, for adducing culpability of sexual assaults, various compelling factors such as threat, intimidation, duress, and misrepresentation of facts need to be established beyond a reasonable doubt by the prosecution.¹⁴² Many times, the defense blames the prosecution to save the skin of the accused for not conducting DNA of rape-related baby or foetus.¹⁴³ The termination of RRP is also

137 *Podimon v. State of Kerala* 2019 SCC OnLine Ker 443; (2019) 196 AIC 811 : (2019) 2 KLT (SN 63) 53; *Pintu v. State of Maharashtra* 2019 SCC OnLine Bom 636; (2019) 2 AIR Bom R (Cri) 523; and *Guruprasad v. State of Maharashtra* 2019 SCC OnLine Bom 1188.

138 *Gyanendra Singh v. State of Uttar Pradesh* 2019 SCC OnLine All 4972; (2019) 109 ACC (Sum 86) 36; and *Om Praksah v. State (NCT of Delhi)* 2019 SCC OnLine Del 8192.

139 *Bobby Bhumak v. State of Himachal Pradesh* 2019 SCC OnLine HP 2137.

140 *Kadalsenthi v. State* 2019 SCC OnLine Mad 6164 at para 17. Also see: *Saurabh v. State (NCT of Delhi)* 2019 SCC OnLine Del 9684;

141 *Om Praksah v. State (NCT of Delhi)* 2019 SCC OnLine Del 8192; *Kiran Karki v. State of Sikkim* 2019 SCC OnLine Sikk 224 : 2019 Cri LJ 5003; *Jamir Ali v. State of Tripura* 2019 SCC OnLine Tri 296; *Yogesh Kumar v. State of Rajasthan* 2019 SCC OnLine Raj 798; *Laddu Gopal v. State of Rajasthan* 2019 SCC OnLine Raj 1899; *Rajinder Kumar v. State of Himachal Pradesh* 2019 SCC OnLine HP 468 : 2019 Cri LJ 2839 para 6; *Sonu Lal v. State of Himachal Pradesh* 2019 SCC OnLine HP 763 : (2019) 200 AIC 484 para 3; *Tota Ram v. State of Himachal Pradesh* 2019 SCC OnLine HP 2008; *Shaktiman v. State of Maharashtra* 2019 SCC OnLine Bom 139; *Anmol v. State of Maharashtra* 2019 SCC OnLine Bom 3922 at para 5; and *Kiran Karki v. State of Sikkim* 2019 SCC OnLine Sikk 224 at para 15.

142 *Ashok Majumdar v. State of West Bengal* 2019 SCC OnLine Cal 5783.

143 *Mahavir Mehto v. State (NCT of Delhi)* 2019 SCC OnLine Del 8757; (2019) 260 DLT 279 : 2019 Cri LJ 3878; and *Babulal v. State of Madhya Pradesh* 2019 SCC OnLine MP 1873 at para 6.

crucial¹⁴⁴ and the apex court in *Suchita Srivastava v. Chandigarh Administration*¹⁴⁵ has recognized woman's right to make a reproductive choice under the ambit of 'personal liberty', an integral component of article 21. A victim of rape cannot be compelled to give birth to the child of a rapist.¹⁴⁶ Judicial order for medical termination of rape-related pregnancy (RRP) is required if the conspectus is over 24 weeks. This issue has also been deliberated during the annual survey of 2018.¹⁴⁷

Fingerprints

The apex court held that fingerprint impression is a pointer towards guilt of an accused and science of identifying thumb impression is an exact science without any mistake or doubt.¹⁴⁸ Defective seizure of fingerprint samples with other pleas became the basis to challenge the order of death penalty by the trial court for murder.¹⁴⁹ The court has also pointed out that "Prosecution has not made any attempt to lift fingerprints from two broken locks..."¹⁵⁰ Despite matching DNA report,¹⁵¹ emphasizing defects in the investigation, the high court set aside the order of death penalty.¹⁵²

In the *Ashish Jain* case, the apex court held that "A bare reading of these Rules¹⁵³ makes it amply clear that a police officer is permitted to take the photographs and

144 *Sabina Mangar Tamang v. State of West Bengal* 2019 SCC OnLine Cal 4120: (2019) 4 Cal LT 151 : (2019) 4 CHN 458. Also see: *Nidhi Singh v. State of Chhattisgarh* 2019 SCC OnLine Chh 60 : AIR 2019 (NOC 672) 222 : (2020) 206 AIC 523; *Minor 'X' (Through Father Kamal Malik) v. State (NCT of Delhi)* 2019 SCC OnLine Del 9701 at para 11; *Rekhaben v. State of Gujarat* 2019 SCC OnLine Guj 3239 para 9; *Jyothi N. v. State of Karnataka* 2019 SCC OnLine Kar 1222; *Ritika Prajapat minor through father Jitendra Prajapat v. State of Madhya Pradesh* 2019 SCC OnLine MP 1687; *ABC v. State of Maharashtra* 2019 SCC OnLine Bom 1031 : (2019) 3 AIR Bom R (Cri) 316 at para 21; *Sangam M. Birajdar v. State of Maharashtra* 2019 SCC OnLine Bom 1791; *Nisha Yadav v. State of Rajasthan* 2019 (1) RLW 423 (Raj.); *Manju v. State of Madhya Pradesh* SCC OnLine MP 4326 : 2019 Cri LJ (NOC 294) 102; *Ram Prasad Rana v. State of Jharkhand* 2019 SCC OnLine Jhar 1872 at para 7; *Mahavir Mehto v. State (NCT of Delhi)* 2019 SCC OnLine Del 8757 : (2019) 261 DLT 401 (DB); and *K. Bavadharaniv. Dean, Government Medical College* 2019 SCC OnLine Mad 8608. In *Sagun Devi Vanshkar v. State of Madhya Pradesh* 2019 SCC OnLine MP 3057, the high court order to terminate rape related pregnancy aged 27 weeks and 2 days of a 11 years old prosecutrix, despite the risk of her health giving more importance to social trauma to her if she deliver a child.

145 (2009) 9 SCC 1 at para 22: (2009) 3 SCC (Civ) 570. Also see: *Meera Santosh Pal v. Union of India* (2017) 3 SCC 462 : 2017 SCC OnLine SC 39; *X v. Union of India* (2017) 3 SCC 458 : 017 SCC OnLine SC 124; and *X v. Union of India* (2016) 14 SCC 382 : (2016) 4 SCC (Cri) 388 : 2016 SCC OnLine SC 733.

146 *Hallo Bi @ Halima v. State of Madhya Pradesh* 2013 SCC OnLine MP 445: 2013 (1) MPHT 451: (2013) 2 MP LJ 655 (MP).

147 GK Goswami, "Forensic Law" LIV *ASIL* 441 (2018). Also see; *Rajkumar v. State of Maharashtra* 2019 SCC OnLine Bom 105 : (2019) AIR Bom R (Cri) 771 at para 2(vii) .

148 *Singh v. State of Punjab* 2004 (3) R.C.R. (Cri) 55. Also see: *A. Antony v. State of Kerala* 2009 AIR (SCW) 4448.

149 *Supra* note 11. Also see: *Mahmood v. State of Uttar Pradesh* (1976) 1 SCC 542 at paras 16 to 19; and *Sonvir alias Somvir v. State (NCT of Delhi)* (2018) 8 SCC 24 at para 26.5.

150 *Id.*, para 105.

151 *Id.*, para 89.

152 *Id.*, para 169.

153 Government of Madhya Pradesh Rules in pursuant to s. 8 of the Identification of Prisoners Act, 1920.

measurements of the accused. Fingerprints can be taken under the directions of the police officer”.¹⁵⁴ The court further held that “... If certain suspicious circumstances do arise from a particular case relating to the lifting of fingerprints, to dispel or ward off such suspicious circumstances, it would be in the interest of justice to get orders from the Magistrate. Thus, there cannot be any hard-and-fast rule that in every case, there should be a Magisterial order for lifting the fingerprints of the accused. Thus, it cannot be held that the fingerprint evidence was illegally obtained merely due to the absence of a Magisterial order authorizing the same”.¹⁵⁵

Voice spectroscopy

Voice matching through spectroscopic analysis plays a significant role in the administration of justice, but the Indian legal system does not have explicit provisions to collect a voice sample of the subject. Consequently, the matter landed in the apex court, but two judges bench, on the pretext of the difference of opinion by 1:1, referred the matter to the higher bench in 2012.¹⁵⁶ In yesteryear annual survey as well, the issue was argued and plea made to deliver judgment on priority because several accused were taking advantage of the existing legal void.¹⁵⁷ On August 2, 2019, the apex court, by applying the principle of *ejusdem generis* and the principle of imminent necessity, in order to address legislative inaction/gap used extra-ordinary provisions, has conceded “... until explicit provisions are engrafted in the Code of Criminal Procedure by Parliament, a Judicial Magistrate must be conceded the power to order a person to give a sample of his voice for the purpose of investigation of a crime. Such power has to be conferred on a Magistrate by a process of judicial interpretation and in the exercise of jurisdiction vested in this Court under Article 142 of the Constitution of India”.¹⁵⁸

The apex court, on voice identification by acquaintance witness, has observed that “Every individual has a distinctive style of speaking which makes identification

¹⁵⁴ *Supra* note 29 at 78, para 37.

¹⁵⁵ *Id.* at 786 para 38. Also see: *Sonvir v. State (NCT of Delhi)* (2018) 8 SCC 24: (2018) 3 SCC (Cri) 486.

¹⁵⁶ *Ritesh Sinha v. State of Uttar Pradesh* (2013) 2 SCC 357: (2013) 2 SCC (Cri) 748. Ranjana P. Deasai J. gave affirmative view by observing, “This is necessary to strike a balance between the need to preserve the right against self-incrimination guaranteed under Article 20(3) of the Constitution and the need to strengthen the hands of the investigating agency to bring criminals to book”. She said that acting under s. 5 of the Identification of the Prisoners Act, 1920, a Magistrate, having ancillary or implied power under s. 53 of the code, can order any person to give voice sample during investigation. However, Aftab Alam J. gave dissenting view arguing that definition of ‘measurement’ under the Act, 1920 and in the Explanation to section 53 of the procedure code does not include voice sample. Also see: *Sudhir Chaudhary v. State (NCT of Delhi)* (2016) 8 SCC 307: (2016) 3 SCC (Cri) 253 : 2016 SCC OnLine SC 747.

¹⁵⁷ *Supra* note 147 at 410.

¹⁵⁸ *Ritesh Sinha v. State of Uttar Pradesh* (2019) 8 SCC 1: (2019) 3 SCC (Cri) 252 : 2019 SCC OnLine 956 at 12 para 27. Also see: GK Goswami, “Obligated Voice Sampling: A Judicial Endorsement in *Ritesh Sinha v. State of Uttar Pradesh*” 61(4) *JILI* 455-462 (2019). Indeed, the Indian Parliament must enact laws particularly on ss. 53, 53-A and 311-A of the procedure code in order to incorporate voice sample for forensic analysis.

by those acquainted possible. Identification of a known person by voice in the darkness has been well recognised in criminal jurisprudence. Even if a person tries to camouflage his voice in one call, given the limitations of human nature there will be a tendency to state certain words or sentences in an inimitable style exposing the identity”.¹⁵⁹

CCTV footage

CCTV provides strong evidence for the presence of the accused with the victim at the relevant time, thus strengthening the doctrine of the last scene together, especially in cold cases,¹⁶⁰ identification of unknown culprit,¹⁶¹ or connecting evidence to establish the culpability of an accused.¹⁶² CCTV footage plays a vital role in cogently stitching crime with criminal, provided it satisfy conditions for admissibility of electronic evidence such as 65-B certificate. In *Runeet Gulathi v. State (NCT of Delhi)*,¹⁶³ the issue of the evidentiary value of CCTV footage has been dealt with by High Court of Delhi. The defense raised the issue of a certificate under section 65-B of the Indian Evidence Act as a mandate in *Anvar P.V. v. P.K. Basheer*.¹⁶⁴ High Court of Bombay held that “In any case, fact remains that no certificate as per the requirement under section 65-B was produced by the prosecution. In view thereof, CCTV footage cannot be relied upon. Hence, CCTV footage cannot be read in evidence”.¹⁶⁵ High Court of Karnataka held that prosecution must provide a digital copy of the CCTV Footage to

159 *Sanjay Rajak v. State of Bihar* (2019) SCC 552 at para 6: (2019) 4 SCC (Cri) 451 : 2019 SCC OnLine SC 895.

160 *Ranu v. State of Madhya Pradesh* 2019 SCC OnLine MP 1456 at para 4; *Kishlay Kant Singh v. State of Madhya Pradesh* 2019 SCC OnLine MP 2439 at para 4; *Anil Surendra Singh Yadav v. State of Gujarat* 2019 SCC OnLine Guj 2692; *State of Uttarakhand v. Akhtar Ali* 2019 SCC OnLine Utt 1558; and *Khushi v. State of Maharashtra* 2019 SCC OnLine Bom 2439 at para 16.

161 *Banwari v. State of Madhya Pradesh* 2019 SCC OnLine MP 4344.

162 *Amit Kumar Singh v. Union of India* 2019 SCC OnLine Del 6992; *Baljeet Singh v. State (NCT of Delhi)* 2019 SCC OnLine Del 9616; *DivyaAshk Pahuja v. State of Maharashtra* 2019 SCC OnLine Bom 7612 at para 19; *Drigesh Kumar Chandravadan v. State of Gujarat* 2019 SCC OnLine Guj 3321; *Raj Pratap v. State (NCT of Delhi)* 2019 SCC OnLine Del 8737 at para 13; *Vaijnath v. State of Maharashtra* 2019 SCC OnLine Bom 1357; *Nikhil Malik v. State of Himachal Pradesh* 2019 SCC OnLine HP 1294; *Rakesh Devi v. State (NCT of Delhi)* 2019 SCC OnLine Del 10334 : (2020) 206 AIC (Sum 26) 13 at para 16; *Sunil v. State (NCT of Delhi)* 2019 SCC OnLine Del 6971 : (2019) 258 DLT (CN 10B) 10; *Vijay v. State of HP* 2019 SCC OnLine HP 2551; *Kaushal Hiranand Jha v. State of Maharashtra* 2019 SCC OnLine Bom 5080 at para 6; *Shamshad v. State (NCT of Delhi)* 2019 SCC OnLine Del 7900 : (2019) 259 DLT (CN 3) 3 : (2019) 200 (Sum 22) 12; and *Runeet Gulati v. State (NCT of Delhi)* 2019 SCC OnLine Del 10208 at para 161.

163 2019 SCC OnLine Del 10208 at para 99. Also see: *Kundan Singh v. State (NCT of Delhi)* (2017) 8 SCC 570; *Sonu @ Amar v. State of Haryana* (2017) 8 SCC 570; and *Shafhi Mohammad v. State of Himachal Pradesh* (2018) 2 SCC 801.

164 (2014) 10 SCC 473. Also see: *Biplav Biswas v. State (NCT of Delhi)* 2019 SCC OnLine Del 8939; and *Raj Kumar v. State (NCT of Delhi)* 2019 SCC OnLine Del 10590.

165 *State of Maharashtra v. Vishwajeet Kerba Masalkar* 2019 SCC OnLine Bom 1329 : (2109) AIR Bom R (Cri) 274, at para 62; *Ganpat Shetye v. State of Maharashtra* 2019 SCC OnLine Bom 4451 at para 43; and *Sangeeta Jain v. State of Uttar Pradesh* 2019 SCC OnLine All 4812 at para 39.

the accused if relied upon a document in the case.¹⁶⁶ Sometimes, defense takes plea if CCTV footage does not disclose the presence of the accused at the place of occurrence.¹⁶⁷ The high court reversed conviction order despite the DNA report indicting to the rape accused.¹⁶⁸ For purpose of surveillance on police atrocities, the apex court has directed to install CCTV camera in all police stations of India.¹⁶⁹

In *Yogendra Singh v. the State of Bihar*,¹⁷⁰ the accused requested the high court to direct the police to collect CCTV footage during investigation to reach out to the truth behind the allegation of murder. The court dismissed the petition, being devoid of merit, holding that “The accused has no right either to control or monitor the investigation. He cannot issue any direction that the investigation should be done in a particular direction”.¹⁷¹ In fact, fair investigation necessitate that the investigation agency must be neutral and collect the exculpatory evidence as well, if any. Indeed, demanding for collection of CCTV content does not seem to control or direct the course of investigation, rather it demands credible scientific evidence which may be helpful both for proving guilt or innocence. Further, if the CCTV source file is not collected timely, it will inevitably erase and get lost forever. Hence, the judiciary must promote ‘participatory investigation’ to ensure fairness in evidence collection and both accused and victim must not be left as mute spectator during the investigation process.

Memory card and audio/video recording: Nature and admissibility

On the nature of the document, Darling J. of King’s Bench held “... any written thing capable of being evidence is properly described as document and that it is immaterial on what the writing may be inscribed.... It is a document no matter upon

166 *Jisal Rasak v. State of Kerala* 2019 SCC OnLine Ker 3164 at para 38 : (2019) 4 KLT 159. Also see: *Hajira N.K. v. Union of India* 2019 SCC OnLine Ker 4894.

167 *Golu alia Rahul Sharma v. State of Madhya Pradesh* 2019 SCC OnLine MP 979 at para 6. Also see: *Raja Ram alias Raj Kumar v. State of Uttar Pradesh* 2019 (2) JIC 139; *Gopal Sarkar v. State of West Bengal* 2019 SCC OnLine Cal 5112 at para 6; *Hema Raj v. State of Himachal Pradesh* 2019 SCC OnLine HP 995 at para 18; *Srinivas v. State of Madhya Pradesh* 2019 SCC OnLine MP 4160 at para 16; *Dilip Jain v. State of Madhya Pradesh* 2019 SCC OnLine MP 4727; *Nidara v. State of Uttar Pradesh* 2019 SCC OnLine All 5164; *Girish Chandra Bajpayee* 2019 SCC OnLine All 5595 at para 52; *Rupesh v. State of Maharashtra* 2019 SCC OnLine Bom 70 (2019) 1 AIR Bom R (Cri) 881 at para 50; and *Nikhil Saxena v. State (NCT of Delhi)* 2019 SCC OnLine Del 11803.

168 *Id.*, para 39.

169 *DK Basu v. State of West Bengal* (1997) 1 SCC 416 : AIR 1997 SC 610. Also see; *Minesh Ganabhai Bhutnetar v. State of Gujarat* 2019 SCC OnLine Guj 1203; *Pradyuman Bisht v. Union of India* [(2018) 15 SCC 429 : (2018) 2 SCC (L&S) 790 : 2018 SC OnLine SC 114], the apex court has also directed the governments to install CCTV in the premises of courts and tribunals; *In Re: Installation of CCTV Cameras in Courts and Tribunals* 2019 SCC OnLine Sikk 24; and *Murugan v. State of Tamil Nadu* 2019 SCC OnLine Mad 519 at para 107(5): (2019) 2 Mad LJ 613.

170 2019 SCC OnLine Pat 189.

171 *Yogendra Singh alias Doman Singh v. State of Bihar* 2019 SCC OnLine Pat 189 3164 at para 14.

what material it be, provided it is writing or printing and capable of being evidence.”¹⁷² In fact, the apex court of India was dealing to decipher the nature of memory card and audio/video recording.¹⁷³ On audio and video-recording it observed, “A video recording of an incident, which is in issue is admissible.”¹⁷⁴ There is no difference in terms of admissibility between a direct view of an incident and a view of it on a visual display unit of a camera or on a recording of what the camera has filmed. A witness who sees an incident on a display or a recording may give evidence of what he saw in the same way as a witness who had a direct view.”¹⁷⁵

Deception detection techniques (DDTs)

In several cases, the polygraph test in conjunction with other forensic technologies has been used in the delivery of justice.¹⁷⁶ It is a well-established fact that expert opinion based on deception detection techniques (DDTs)¹⁷⁷ *per se* is not

172 *King v. Daye* [1908] 2 K.B. 333. Also see: Court in *Grant v. Southwester and County Properties Ltd.* [1975] Ch. 185.

173 *P. Gopalkrishnan alias Dileep v. State of Kerala* 2019 SCC OnLine SC 1532 at para 23. The apex court dealt with various aspects including for providing clone copies of the electronic evidence, fair trial etc. At para 50, the apex court referred *Asha Ranjan v. State of Bihar* [(2017) 4 SCC 397; (2017) 2 SCC (Cri) 376 at para 86.2] where apex court observed, “When there is an intra-conflict in respect of the same fundamental right from the true perceptions, it is the obligation of the constitutional courts to weigh the balance in certain circumstances, the interest of the society as a whole, when it would promote and instill Rule of Law. A fair trial is not what the accused wants in the name of fair trial. Fair trial must soothe the ultimate justice which is sought individually, but is subservient and would not prevail when fair trial requires transfer of the criminal proceedings”.

174 *Taylor v. Chief Constable of Cheshire* [1987] 1 All ER 225, 84 Cr. App. Rep 191, DC. It was observed, “There is no difference in terms of admissibility between a direct view of an incident and a view of it on a visual display unit of a camera or on a recording of what the camera has filmed. A witness who sees an incident on a display or a recording may give evidence of what he saw in the same way as a witness who had a direct view.” Also see: *R. v. Fowden & White* [1982] Crim. LR 588, CA; *R. v. Grimer* [1982] Crim. LR 674, CA; and *R. v. Blenkinsop* [1995] 1 Cr. App. Rep 7, CA.

175 *Supra* note 173 at 39.

176 *CBI v. Mohd. Parvez Abdul Kayyum* (2019) 12 SCC 1; (2019) SCC (Cri) 32; 2019 SCC OnLine SC 832; *Sunita Devi v. UOI* (2019) 5 SCC 658 : (2019) 2 SCC (Cri) 690 : 2019 SCC OnLine SC 245; *Chandru v. State* (2019) 15 SCC 666 : (2019) 1 SCC (Cri) 465 : 2019 SCC OnLine SC 176; *Sr. Sephyv. CBI* 2019 SCC OnLine Ker 7772; (2020) 1 KTL 763; Waseem A. Bhat, “Dilemma Created By The Privilege Against Self Incrimination” (2019) *GJLDP* (April) 30.

177 DDTs include Narco-analysis, Polygraph, Brain Mapping and Forensic Psychological Assessment and Forensic Statement Analysis. *Selvi v. State of Karnataka* [(2010) 7 SCC 263; (2010) 3 SCC (Cri) 1], a landmark judgement, the apex court at para 146 spoke, “It is quite evident that the narco-analysis technique involves a testimonial act. A subject is encouraged to speak in a drug-induced state, and there is no reason why such an act should be treated any differently from verbal answers during an ordinary interrogation. In one of the impugned judgments, the compulsory administration of the narco-analysis technique was defended on the ground that at the time of conducting the test, it is not known whether the results will eventually prove to be inculpatory or exculpatory.” Also see: *State of U.P. v. Sunil*, (2017) 14 SCC 516 : (2017) 4 SCC (Cri) 909 : 2017 SCC OnLine SC 520 at 522 para 11; *Yadav @ Siddharth v. State of NCT of Delhi* 242 (2017) DLT 537; and *Abhijit Ghosh v. State (NCT of Delhi)* 2019 SCC OnLine Del 10690 at para 25.

admissible in the court of law, but these inputs may be helpful as the lead for further course of investigation particularly in cold or blind cases.¹⁷⁸ However, informed and competent consent of the subject as directed by the apex court in the *Selvi*¹⁷⁹ may not absolve the state from gross violation of the right against testimonial compulsion of the subject cherished under article 20(3) of the Constitution. The author's argument is based on legal maxim "*Quando aliquid prohibetur ex directo, prohibetur et per obliquum*", which means "you cannot do indirectly what you cannot do directly". This procedural conundrum necessitates detailed socio-legal discourse.

Identification by superimposition test

Apex court of India, after citing several judgments, has reiterated the undisputed evidentiary value of expert's opinion based superimposition.¹⁸⁰ However, the court further held that "... a superimposition test cannot conclusively establish the identification of a dead body, because by itself it may not conclusively establish identification".¹⁸¹ Court has also said, "... a DNA test would have helped the courts immensely in determining the reliability of identification of the body of deceased".¹⁸² In this judgment, the apex court has explained various vital legal aspects such as circumstantial evidence, last seen together theory, the discovery of facts under section 27 of the Indian Evidence Act, and further or fresh investigation. The court also observed that "... it is quite possible that more than one piece of information is given to the Police Officer In-charge of the Police Station in respect of the same incident involving one or more than one cognizable offences. In such a case, he need not enter each piece of information in the Diary. All other information is given orally or in writing after the commencement of the investigation into the facts mentioned in the First Information Report will be statements falling under Section 162 Cr. PC".¹⁸³ The

178 *Ranjan v. State of Kerala* 2020 SCC OnLine Ker 173. At para 11, the high court observed that "However, the Apex Court [the *Selvi* case] has held that if sufficient room is left for voluntary administration of impugned techniques in the context of criminal justice, provided, there are safeguards. In that regard the Apex Court has categorically held in the latter portion of paragraph 264 thereof as follows: "Even when the subject has given consent to undergo any of these tests, the test results by themselves cannot be admitted as evidence, because the subject does not exercise conscious control over the responses during the administration of the test. However, any information or material that is subsequently discovered with the help of voluntary administered test results can be admitted in accordance with Sec. 27 of the Evidence Act, 1872". Also see: *Yadav @ Siddharth v. State of NCT of Delhi* 242 (2017) DLT 537; and *Abhijit Ghosh v. State (NCT of Delhi)* 2019 SCC OnLine Del 10690 at para 25.

179 *Supra* note 177.

180 *Supra* note 118.

181 *Id.* at para 53 and 55.

182 *Ibid.*

183 *Babubhai v. State of Gujarat* (2010) 12 SCC 254 at para 20; (2011) 1 SCC (Cri) 336. Also see, *supra* note 118 at 26.

apex court also observed that “No DNA test to identify the dead body was required, as body was amply identified by other means”.¹⁸⁴

Determination of age of a document

The issue of the age of ink was raised before High Court of Andhra Pradesh to adjudicate the dispute of signature made on a promissory note related to a loan.¹⁸⁵ Based on various judgments,¹⁸⁶ the court observed that Neutron Activation Analysis, Bhabha Atomic Research Centre (BARC), Mumbai has facilities to find out the approximate range of time during which the alleged writings would have been made. In *Kambala Nageshwara Rao v. Kesana Balakrishna*,¹⁸⁷ the high court has observed that the determination of the age of ink or pen alone cannot ascertain the time of signature or writing, since ink or pen may have been manufactured much earlier than it was used for signature or writing.

VII CONCLUSION

Law must be techno-centric, is a collective cry for stimulating justice. DNA and other forensic evidence are widely used in India but they need legitimate recognition under various provisions of procedural codes.¹⁸⁸ India is processing for overhauling its criminal law, hence forensic and other expert opinion must be dealt with separately in a comprehensive manner. The lackadaisical approach of investigating agency in the practice of expert opinion needs deterrence. Legislature and judiciary must introduce provisions for promoting the use of forensic inputs during evidence collection. Indeed, the magistrate has the power under section 156(3) Cr PC to monitor the investigation, if deemed fit, though he cannot investigate himself.¹⁸⁹ India has a plethora of laws, but effective implementation is wanted. Zero tolerance policy must be ensured for negligent and shoddy attitude in the administration of justice.

184 *Ranjit Kumar Haldhar v. State of Sikkim* (2019) 7 SCC 648 at para 23. The apex court at para 12 to 19 has also dealt with the provisions under section 106 of the Indian Evidence Act, to meet certain exceptional circumstances, for shifting burden of proof in criminal cases from prosecution where it is impossible or difficult for prosecution to establish facts which are especially within knowledge of the accused. Also see: *Ishwari Lal Yadav v. State of Chhattisgarh* (2019) 10 SCC 437 at para 24; and *Attygalle v. R.* 1936 SCC OnLine PC 20 : AIR 1936 PC 169; and *Stephen Seneviratne v. R.* 1936 SCC OnLine PC 57 : (1936) All ER 36, 49.

185 *G.V. Rami Reddy v. D. Mohan Raju* 2019 SCC OnLine AP 72: (2019) 4 ALT 400 : AIR 2019 AP 83.

186 *Namineni Audi Seshiah v. Numburu Mohan Rao* (4) 2018 (6) ALT 285: 2018 (6) ALD 751; and *T. Rajalingam v. State of Telangana* (3) 2017 (3) ALT (Cri) 203 (AP).

187 AIR 2014 AP 37: (5) 2014 (1) 636.

188 In *Abhijeet Singh v. State of Punjab* 2019 SCC OnLine P and H 1118 the court, while dealing with various aspects of witness protection, has reiterated the observations of (I) “Malimath Committee on Reforms of Criminal Justice System” at para 11.4: “The DNA experts should be included in sub section 4 of the code. This repeats again and again”.

189 *Sakiri Vasu v. State of U.P.* (2008) 2 SCC 409 : (2008) 1 SCC (Cri) 440 : AIR 2008 SC 907; *Hemant Yashwant Dhage v. S.T. Mohit* 2009 SCC OnLine Bom 2251; *Sudhir Bhaskarrao Tambe v. Hemant Yashwant Dhage* (2016) 6 SCC 277; and *Deepali Aggarwal v. State (NCT of Delhi)* 2020 SCC OnLine Del 740.

Augmentation of forensic facilities in terms of men and machine is a long-awaited expectation. The *Nirbhaya* Fund¹⁹⁰ is lying largely unutilized, due to apathy of state actors. It may be considered to use a portion of it for strengthening forensic facilities.¹⁹¹ The deficit of forensic competence at various levels of criminal justice apparatus deserves attention. The standard procedural protocols, chain of custody, report writing must be construed to maintain transparency and sanctity of expert opinion. Confidentiality of investigation, an integral part of the ‘right to privacy’, must also be protected, otherwise, peripheral factors such as media trial may steer the legal course to meet theatrically created public aspirations. Media trial and public perception may potentially affect cognitive thinking of an investigator, after all, he is also a human. The jurisprudential perspective of deception detection techniques (truth machines), particularly conducting narco-analysis, must also be addressed in a comprehensive and professional manner.¹⁹²

Recently the apex court has taken stock of the implementation of provisions of criminal law relating to rape and other sexual offences, “In order to collate all the information and status and provide a holistic view of the implementation of provisions of law and to suggest measures for making the criminal justice system more efficacious and responsive towards the offence of rape and other sexual offences ...”.¹⁹³ The hearing of the extant matter is in progress. This case kindles the hope of heralding a paradigm shift in the rape jurisprudence in India. Indeed, quality of investigation, huge pendency of cases in various courts and the low rate of conviction in India is clarion call to wake our conscience as Benjamin Franklin has aptly observed: that “Justice will not be served until those who are unaffected are as outraged as those who are.”

190 After Delhi Gang rape incidence on Dec. 16, 2012, the Government of India in 2013 has raised a corpus of . 10 billion to fund various measures for women safety. Only 20% of the fund have been utilized as reported by *India Today*, Dec. 5, 2019, available at: <https://www.indiatoday.in/news-analysis/story/nirbhaya-fund-utilisation-shows-why-women-continue-to-be-unsafe-in-india-1625407-2019-12-05> (last visited on Dec. 23, 2020).

191 *RK Joysana v. Union of India* 2019 SCC OnLine Mani 272 at para 11, the issue of utilization of the *Nirbhaya* Fund was raised including strengthening forensic facilities. However, the court directed the government to take prompt action.

192 Jinee Lokaneeta, “Hathras and truth machine” *The Indian Express* Lucknow Edn., Oct. 19, 2020 at 10.

193 *In Re: Assessment of the Criminal Justice System in Response to Sexual Offences* 2019 SCC OnLine SC 1654 at para 88. Also see: *Anokhilal v. State of Madhya Pradesh* 2019 SCC OnLine SC 1637.