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FORENSIC LAW

G.K. Goswami*

“Take nothing on its looks; take everything on evidence. There’s no better rule.”¹

I INTRODUCTION

FORENSIC SCIENCE enables evidence-based administration of justice. This blend of applied science and law hinges on a trans-disciplinary technological approach to provide expert opinion in order to discover the truth behind a fact, which empowers the judicial system to determine guilt or innocence. Refurbishing of the past is a forte of forensics, which brazenly either fortifies corroboration or illumines incongruities of oral testimony.²Evidence is the fulcrum for justice. The investigation is the process for the collection of evidence enabling judicial authority to find the truth, which is ultimately the triumph of justice. However, revealing truth beyond a reasonable doubt, a binding bench mark in the criminal trial, is an uphill task yearning for due care and procedural probity.³ Proper and fair investigation on the part of investigating agency is the backbone of the rule of law.⁴ Scientific temper in evidence collection props procedural transparency, which is obligatory for a fair trial to deliver immaculate justice.

Different forensic technologies such as Palm Fingerprints, DNA Profiling, Serology, Psycho-analysis, Voice spectroscopy, Ballistics have evidenced their

* LL.M., Ph.D., D.Sc. Serving member of Indian Police Service in the State of Uttar Pradesh. Honorary Professor of Law & Forensics in National Law University, Delhi (NLUD); National Forensic Sciences University (NFSU), Gandhinagar; Rashtriya Raksha University, Gandhinagar; and Jindal Global Law School, Sonapat. Currently pursuing LLD from Rajiv Gandhi National University of Law (RGNU), Patiala. Candidate for Fulbright Fellowship.
(email id.: goswamigk.ips@gmail.com)

1 Charles Dickens.

2 Claude Roux, Olivier Ribaux & Frank CRISPINO, “Forensic science 2020 – the end of the crossroads?” *Australian Journal of Forensic Sciences*, 1-12 (2018).

3 In *Ashok Debbarma @ Achak Debbarma v. State of Tripura* [(2014) 4 SCC 747 : (2014) 2 SCC (Cri) 417], the Apex Court held that in our criminal justice system, for recording guilt of the accused, the prosecution does not need to prove case with absolute or mathematical certainty, but only beyond a reasonable doubt. Criminal Courts, while examining whether any doubt is beyond a reasonable doubt, may carry in their mind, some “residual doubt”, even though the Courts are convinced of the accused person’s guilt beyond a reasonable doubt. Also see: *Prakash v. State of Maharashtra* 2021 SCC OnLine Bom 6057.

4 *Sasi Thomas v. State*, (2006) 12 SCC 421 paras 15 and 18.

evidentiary credence in court proceedings. The battery of evidence including expert opinion collectively empowers the investigating agencies to complete the chain of the incident. In violent cold cases, the doctrine of last seen together and digital inputs also aid to reach out to the truth behind a crime.⁵ An accused is duty-bound to disclose the facts in his knowledge to divulge truth as desired under section 106 of the Indian Evidence Act, 1872, failing which the court may take adverse presumption against the accused under section 114 of the Indian Evidence Act, 1872.⁶

In *State of Himachal Pradesh v. Jai Lal*, the apex court opined that “the expert evidence is the one who made the subject upon which he speaks a matter of particular study, practice, or observation and he must have special knowledge of the subject.”⁷ A judge must observe four criteria for admission of expert evidence which includes, (i) relevance; (ii) necessity in assisting the trier of fact; (iii) absence of any exclusionary rule; and (iv) a properly qualified expert.⁸ In Common Law jurisdictions, forensic inputs are advisory in nature. Despite being classified as secondary evidence; expert opinion has immense potential for corroboration. An expert is not a witness of fact and can be subjected to cross-examinations and contradictions. It is not the province of expert to act as Judge or Jury, but his real task is to put before the court all materials, together with reasoning, to induce the court, although not an expert, to form its own judgment based on logical observations of those materials.⁹

The High Court of Gujarat has succinctly cautioned that “Every technology, however, must be seen in the light of the limitation it comes with. While, therefore, appreciating any medical evidence or forensic reports, it would be of utmost importance for the court to properly understand its effectiveness, its fallibility or infallibility as also the reason why a particular test may either fail or give misleading results”.¹⁰ Today, having metier of procedural protocols and a strict regime of accreditation, Forensic disciplines have accomplished eminence and become inevitable during court contests, and, at the global landscape, its usage steadily snowballing. Courts have invariably accentuated the use of forensic technologies in the judicial process.

Since 2020, the COVID-19 pandemic at the global landscape has largely wedged life at every level, and the judiciary is no exception. However, from apex to lower courts all were assiduously committed to the cause of justice, and court proceedings were conducted regularly in online mode. In this Annual Survey, nearly 150 germane judgments delivered by the Indian Constitutional Courts during 2021 have been pondered upon to bring out relevant legal challenges and complexities associated

5 *Prabhu Lal v. State of Rajasthan* 2021 SCC OnLine Raj 807 at para 4.

6 *Rashida Tripura v. State of Tripura* 2021 SCC OnLine Tri 444 at para 61. Also see: GK Goswami & Siddhartha Goswami, “Filling the Blanks” in Chain of Evidence: Role Reversal for Burden of Proof”, *Cr LJ* 1-12 (2021).

7 (1999) 7 SCC 280 at para 13 : 1999 SCC (Cri) 1184 : 1999 SCC OnLine SC 885.

8 *R. v. Chikmanglur Mohan* [1994] 2 SCR 9 at pp. 20-25, para 43. Also see: *White Burgess Langille Inman v. Abbott and Haliburton Co.*, 2015 SCC 23 : (2015) 2 S.C.R. 182; *R. v. Joel France* 2017 ONSC 2040 at para 9.

9 *Tili v. Jones* AIR 1934 All 237.

10 *State of Gujarat v. Mohan Hamir Gohil Dalit* LAWS(GJH)-2013-8-105 para 27.

with forensic opinion. Linkages between fair investigation and fair trial to ensuring delivery of unblemished justice has also been explored. Various legal dimensions of expert evidence especially on procedural fairness, use of DNA evidence in bodily offences, forensic management of sexual assaults and rape-related pregnancies, non-DNA forensic inputs have emerged during the extant analytical inquiry, which has succinctly been pondered in various sections of this Survey. A few submissions, based on doctrinal scrutiny of these judgments, have also been culled out in the concluding section of this Survey.

II FAIR INVESTIGATION: A PRECURSOR TO FAIR TRIAL

Worldwide, in legal discourse, a fair trial has been given a higher pedestal fortifying the perception that the judiciary is the sole repository of justice. However, in a true sense, such preposition is imperfect and lopsided since other actors of the justice system have an organic role especially in the collection and presentation of evidence. The investigation is the foundation for a criminal trial, preceding courtroom proceedings.¹¹ "A proper investigation into crime is one of the essentials of the criminal justice system and an integral facet of the rule of law".¹² In *Manohar Lal Sharma*, the apex court held that the aim of the investigation is ultimately to search for truth and bring the offender to book.¹³ The court kept on observing, "In the rare and compelling circumstances, the superior courts may monitor an investigation to ensure that the investigating agency conducts an investigation in a free, fair and time-bound manner without any external interference."¹⁴

In absence of fair, neutral, unbiased and transparent investigation, a fair trial would be a farse and utopian proposition.¹⁵ As an organ of the State, the investigating agency has been made singular authority to decide the manner for conducting the investigation, and no one can steer that investigation should be done in a particular manner.¹⁶ Neither victim nor accused has the right even to make suggestions for gathering evidence during the investigation. Investigating officer hardly discloses exculpatory evidence before the court. Thus, the investigation does not reflect a level playing field between prosecution and defense. The police and prosecutorial misconduct are globally known reality resulting in gross miscarriage of justice and wrongful convictions.¹⁷ Although, State is considered *paren patriae*, but the accused has hardly

11 *Ajay Kumar Yadav v. State of U.P.* 2021 SCC OnLine All 619 at para 25 : (2021) 117 ACC 562.

12 *Id.* at para 33.

13 *Manohar Lal Sharma v. Principal Secretary* (2014) 2 SCC 532 at para 26 : (2014) 4 SCC (Cri) 1 : 2013 SCC OnLine SC 1120. at para 39. Also see: *Saroj Kumar v. State of Bihar* 2021 SCC OnLine Pat 2236.

14 *Id.* at para ...

15 *Banke Bihari Singh v. State of Bihar* 2021 SCC OnLine Pat 2774 at para 9.

16 *Romila Thapar v. Union of India* (2018) 10 SCC 753; *Prabal Dogra v. State of M.P.* 2017 SCC OnLine MP 2172 : ILR 2017 MP 2881 : 2018 Cri LJ 1738.

any remedy to annul the state-sponsored transgressions in the process of evidence gathering. This irony has global attendance especially among the Common Law States, which is responsible for breeding erroneous convictions of innocents, and undue exonerations endorsing recidivism.

In *Mukesh Singh v. State (Narcotic Branch of Delhi)*,¹⁸ the apex court observed that whether the investigation is fair or not is to be decided at the time of trial. In case investigation is found unfair at a stage of the trial, then it may lead to an irreparable travesty of justice, since evidence by then may be lost forever.¹⁹ In *State of Bihar v. P.P. Sharma*,²⁰ the apex court also observed, “Although the accused person has no right to be heard at that stage but in case the accused person has any grouse against the investigating officer or with the method of investigation, he can bring to the notice of the Magistrate his grievances which can be looked into by the Magistrate,” under section 156(3) Cr.PC,²¹ but this legal remedy is far from satisfying.

The apex court held that “a fair trial includes a fair investigation. If the investigation is neither effective nor purposeful nor objective nor fair, the courts, if considered necessary, may order a fair investigation, further investigation or reinvestigation as the case may be to discover the truth so as to prevent miscarriage of justice.”²² The court held that “It is the bounden duty of a court of law to uphold the

- 17 Somil Trivedi and Nicole Gonzalez Van Cleve, “To serve and protect each other: How Police-prosecutor co-dependence enables police misconduct” 100:895 *Boston University Law Review* 895-933 (2020). Also see: GK Goswami and Aditi Goswami, “Taking Injustice Seriously: Proving Innocence of Wrongly Convicted Persons” in Dilip Ukey, Chirag Bayan and Melissa Walavalkar (eds.) *Revisiting Reforms in the Criminal Justice System in India* 34-50 (Thomson Reuters, Legal: South Asia, 2020); *Ankush Maruti Shinde v. State of Maharashtra* (2019) 15 SCC 470 : (2020) 1 SCC (Cri) 315 : 2019 SCC OnLine SC 317.
- 18 (2020) 5 SCC 120 at para 11, p. 161 : (2021) 4 SCC (Cri) 356 : 2012 SCC OnLine SC 700. Also see: *State of Maharashtra v. Central Bureau of Investigation* 2021 SCC OnLine Bom 5467.
- 19 *State of Bihar v. P.P. Sharma*, 1992 Supp (1) SCC 222 : AIR 1991 SC 1260.
- 20 1992 Supp (1) SCC 222 : AIR 1991 SC 1260. Also see: *K. Venugopal v. State of Kerala* 2021 SCC OnLine Ker 3943.
- 21 *Sakiri Vasu v. State of U.P.* (2008) 2 SCC 409 at para 28. Also see: *Amar Nath Chaubey v. Union of India* 2020 SCC OnLine SC 1019 : 2021 Cri LJ 709 : AIR Online 2020 SC 898 at para 8, the apex court held that “A fair investigation is, but a necessary concomitant of Articles 14 and 21 of the Constitution of India and this Court has the bounden obligation to ensure adherence by the police..”; *Jaydeep Dilip Taware v. State of Maharashtra* 2021 SCC OnLine Bom 3340 : (2021) 3 AIR Bom R (Cri) 910; *Paspal Sahani v. State of Bihar* 2021 SCC OnLine Pat 2049 at para 21, the high court held that “Fair trial is a constitutional guarantee to an accused under article 21 of the Constitution of India. Fair trial includes fair investigation. Onus lies on the prosecution to demonstrate that the investigation was fair enough to cause no prejudice to the accused”.; *Arnab Manoranjan Goswami v. State of Maharashtra* (2021) 2 SCC 427 : 2020 SCC OnLine SC 964.
- 22 *Resham Singh v. State of Uttar Pradesh* 2021 SCC OnLine All 718 at para 20. : (2021) 6 All LJ 591; *Ajit Kumar Thakur v. Union of India* 2021 SCC OnLine Jhar 755. Also see: In *Vinay Tyagi v. Irshad Ali* (2013) 5 SCC 762 at para 20, p. 782 : (2013) 4 SCC (Cri) 557 : 2012 SCC OnLine SC 1064], the apex court has catalogued investigation into three categories, firstly initial investigation, secondly further investigation, and thirdly fresh or de novo or re-investigation.

truth and truth means the absence of deceit, absence of fraud and in a criminal investigation a real and fair investigation, not an investigation that reveals itself as a sham one. It is not acceptable. It has to be kept uppermost in mind that impartial and truthful investigation is imperative. ...”²³The necessity for scientific investigation as a precursor to a fair trial has been underpinned by the apex court by observing, “What ultimately is the aim or significance of the expression ‘fair and proper investigation’ in criminal jurisprudence? It has a twin purpose: Firstly, the investigation must be unbiased, honest, just and in accordance with law; secondly, the entire emphasis on a fair investigation has to be to bring out the truth of the case before the court of competent jurisdiction...”²⁴A fair investigation can truly be ensured by technological intervention through forensic epistemology.

III DNA EVIDENCE IN CIVIL DISPUTE RESOLUTION

DNA is a compelling forensic tool expressly for human identification as observed by the apex court, “The Experts opine that the identification is almost hundred percent precise. Using this structure of genetic information by generating a DNA profile of the individual, identification of an individual is done like in the traditional method of identifying fingerprints of offenders. Fingerprints are only on the fingers and at times may be altered. Burning or cutting a finger can change the make of the fingerprint. But DNA cannot be changed for an individual no matter whatever happens to a body”.²⁵ The court kept on observing, “... it is quite clear that DNA report deserves to be accepted unless it is dented and for non-acceptance of the same, it is to be established that there had been no quality control or quality assurance. If the sampling is proper and if there is no evidence as to tampering of samples, the DNA test report is to be accepted”.²⁶

In civil adjudication, DNA has a multi-dimensional role in disputes like parentage determination, deciding maintenance claims for the child and mother,²⁷ purity of commercial products etc. DNA has also been used for detecting doping by athletes.²⁸ Explicit consent of an individual involved therein civil disputes is required for a DNA test, and the court may take adverse assumption under section 114 of the Evidence Act if the party refuse to provide a DNA sample. Now-a-days, non-invasive techniques such as buccal swab are being collected for DNA, and a blood sample is not always

23 *Dharam Pal v. State of Haryana* (2016) 4 SCC 160 at para 25. Also see: *Ram Udagar Mahto v. State (NCT of Delhi)* 2021 SCC OnLine Del 4368 : (2021) 284 DLT 122.

24 *Vinay Tyagi v. Irshad Ali alias Deepak* (2013) 5 SCC 762 at para 48 : (2013) 4 SCC (Cri) 557 : 2012 SCC OnLine SC 1064. Also see: *Ram Udagar Mahto v. State (NCT of Delhi)* 2021 SCC OnLine Del 4368.

25 *Mukeshv. State (NCT of Delhi)* (2017) 6 SCC 1 at para 455 : (2017) 2 SCC (Cri) 673 : 2017 SCC OnLine SC 533. Also see: *Patangi Balram Venkata Ganesh v. State of A.P.* 2003 (1) ALD Cri 789, 2003 (2) ALT Cri 9, 2003 CriLJ 4508 : (200) 14 SCC 607 : (2010) SCC (Cri) 190 : 2009 SCC OnLine SC 1341; *Ashok Dhondiram Dhavale v. State of Rajasthan* 2021 SCC OnLine Bom 648 at para 35.

26 *Id.* at para 228.

27 *Vivek Swaroop Srivastava v. State of Uttarakhand* 2021 SCC OnLine Utt 293 at para 4.

28 *Vijay Singh v. National Anti-Doping Agency (NADA)* 2021 SCC OnLine Del 1317 para 3.

necessary. In the extant survey, various legal facets of paternity determination in civil litigations have been observed and succinctly deliberated below.

Parentage determination

Parentage determination may be desired both for adjudicating civil and criminal matters. In the Indian legal lexicon, the sole provision under section 112 of the Indian Evidence Act, 1872 entails conclusive presumption of paternity provided the child in question is born during wedlock between legitimately wedded parents. Thus, legal presumption of legitimacy of the child is a *sine qua non* and conditioned upon the legitimacy of marriage between both parents at the time of childbirth. In nutshell, the existing law recognizes only socio-legal father (pater), and expects social morality to be observed by the wives in sexual conduct; and there is no room for biological father (genitor) to assume paternity beyond the scope of section 112. None of the jurisdiction globally recognizes multiple fathers of a child especially to decide lineage and inheritance. However, in real life the child may be borne due to the extra-marital relationship of the wife, consequently, socio-legal father may be different than biological father, who indeed contributed sperms for conceiving the child. Childbirth is a biological phenomenon and cannot be regulated simply by socio-legal norms.

DNA, being bio-molecule, *per se* determines the biological father, and it has no business to examine the legality of marital status between mother and genitor of her child. This forensic reality give birth to an unresolved legal conundrum especially when the child is born to a legally wedded wife but DNA reveals that the father of the child is another person than the husband of the child's mother. However, DNA enquiry for paternity has emerged as a scientific panacea to know ones' genealogical origin through tracing biological linkages between parents and other descendants of a person.²⁹ Surprisingly, legal provisions keep conspicuous silence to determine maternity.

DNA assisted the first case in 1985 for resolving immigration dispute of a child of Ghanian origin wanting to enter in the United Kingdom, and later in 1986, DNA entered in the criminal courtroom as genetic evidence to prove the innocence of a suspect and guilt of serial rapist. The petitioners are worldwide desirous of paternity determination for invigorating their claims in various civil suits such as inheritance for property, seeking divorce by proving allegations of the infidelity of wives through child's biological origin, etc. Indian courts got flooded with petitions mainly from disgruntled husbands having doubts about the sexual integrity of their wives to determine the biological fatherhood of their children. In 1993, the Supreme Court of India dealt with this issue with great caution and culled out five guidelines for the

29 The Court of Appeal (Civil Division) observed in *H. and A. (Children) (Paternity: Blood Tests)*, *In re*: "Over thirty years ago in his speech in *S. v. McC Lord Hodson* (AC pp.57 F-58 A), said "...The only disadvantage to the child which is put forward as an argument against the use of a blood test, not for therapeutic purposes but to ascertain paternity, is that the child is exposed to the risk that he may lose the protection of the presumption of legitimacy".

lower courts to deal with paternity determination through DNA.³⁰ Subsequently, umpteen number judgments have been delivered in last nearly three decades, but jurisprudence on paternity determination got blurred due to diverse judicial interpretations oscillating between ‘presumption’ and ‘truth’ behind paternity.³¹ The author of this article, based on his research, has explored three distinct phases of legal construction for DNA led paternity determination in India.³² However, in absence of an explicit legal framework on the status of the biological father, legal quandary on paternity do exist in India and courts suffer from inconsistencies in legal construction.

Chhattisgarh High Court quashed the order of the court below and permitted a DNA test for paternity elucidation of a child on premise that wife was living separately for long and husband had no access to her.³³ In *Ashok Kumar v. Raj Gupta*,³⁴ the plaintiff claimed a share in the coparcenary property based on lineage, but the defendant denied his claim. The plaintiff filed an application seeking directions from the court to conduct a DNA test to establish parental linkages with the defendant’s

30 *Goutam Kundu v. State of West Bengal* (1993) 3 SCC 418 : 1993 SCC (Cri) 928 : AIR 1993 SC 2295. In this landmark judgment, the apex court construed five guidelines for the courts below for ordering DNA test in the petitions demanding for paternity determination. The guidelines at page 428, para 26 are as under:

- (1) that courts in India cannot order blood test as a matter of course;
- (2) wherever applications are made for such prayers in order to have roving inquiry, the prayer for blood test cannot be entertained;
- (3) There must be a strong prima facie case in that the husband must establish non-access in order to dispel the presumption arising under Section 112 of the Evidence Act;
- (4) The court must carefully examine as to what would be the consequence of ordering the blood test; whether it will have the effect of branding a child as a bastard and the mother as an unchaste woman; and
- (5) No one can be compelled to give sample of blood for analysis.

Also see: *Bhartirajv. Sumesh Sachdeo* AIR 1986 All 259, para 28 and 32.

31 *Kamti Devi v. Poshi Ram* (2001) 5 SCC 311; *Sharda v. Dharmpal* (2003) 4 SCC 493 : 2003 SCC OnLine SC 433; *Banarasi Dass v. Teeku Dutta* (2005) 4 SCC 449; *Bhabani Prasad Jena v. Convenor Secretary, Orissa State Commission for Women* (2010) 8 SCC 633 ; *Dipanwita Roy v. Ronobroto Roy* (2015) 1 SCC 365.

32 GK Goswami, “Three Decades of DNA Evidence: Judicial Perspective and Future Challenges in India” in HIRAK RANJAN DAS ET AL. (EDS.) *DNA Fingerprinting: Advancements and Future Endeavours* 181-205 (Springer Nature: Singapore, 2018). Also see: “Forensic Law” Vol. LI *Annual Survey of Indian Law*, Indian Law Institute, New Delhi, 597-630 (2015); In *Maria Margarida Sequeira Fernandes v. Erasmo Jack de Sequeira*, [(2012) 5 SCC 370 : (2012) 3 SCC (Cri) 281] it was reiterated that the truth is the guiding star and “every trial is voyage of discovery in which truth is the quest”. The trend world over of full disclosure by the parties and deployment of powers to ensure that the scope of factual controversy is minimised. Further, adverse inference from non-compliance cannot be a substitute to enforceability of a direction for DNA testing in order to protect valuable right of the appellant to prove his paternity through DNA testing cannot be taken away by asking the appellant to be satisfied with the comparatively weak “adverse inference”; and *Kadali Durgarao v. Kodali Surya Kumari* 2021 SCC OnLine AP 110 : 2021 Cri LJ 3158.

33 *Ramnarayan Raje v. Vikram Singh* 2021 SCC OnLineChh 2239 at para 12.

34 2021 SCC OnLine SC 848. Also see: *Palanisamy v. Vijaykumar* 2021 SCC OnLine Mad 91 : (2021) 1 MWN (Civil) 632 : (2021) 2 HLR 443; and *Medida Veeraiah v. Medida Vijaya Narasimha Rao* CDJ 2018 APHC 756.

parents. Taking all aspects into account, “the Court opined that onus is on the plaintiff to prove that he is a coparcener amongst the defendants by way of his birth in their family and such burden does not shift to the defendants. Since the plaintiff had refused to give the DNA sample, the view taken was that the Court cannot force the plaintiff to provide a DNA sample and accordingly the defendants’ application came to be dismissed by the learned Trial Judge.”³⁵ The plaintiff approached the High Court by filing Revision Petition, where it was adjudicated that “... a DNA test is a double-edged weapon and is a vital test to determine the relation of a party and the plaintiff who is claiming to be the son of late Trilok Chand Gupta and Sona Devi, should not shy away from the DNA test suggested by the defendants. The plea for conducting the DNA test on the plaintiff was accordingly allowed by interfering with the contrary view taken by the trial court”.³⁶ Taking exception to the revisional order of the High Court, the aggrieved plaintiff knocked on the door of the Apex Court. The court has to answer whether the plaintiff without subjecting himself to a DNA test, is entitled to establish his right over the property in question, through other material evidence. Apart from the timing of the application for DNA, it is also a legal issue whether, in the absence of consent, a party can be forced to provide a sample for a DNA in property disputes. The apex court referred to several relevant judgments dealing DNA based determination of lineages or inheritance, which have been briefly deliberated below for conceptual clarity.

In *Banarsi Das* the deceased died intestate leaving behind five brothers, and the plaintiff claimed to be the deceased’s daughter and she filed a petition for a grant of succession certificate in respect of properties of the deceased. The apex court held that DNA test is not to be directed as a matter of routine but only in deserving cases.³⁷ Commenting upon section 112 of the Indian Evidence Act, the apex court observed, “In matters of this kind the court must have regard to Section 112 of the Evidence Act. This section is based on the well-known maxim *pater is est quem nuptia demonstrant* (he is the father whom the marriage indicates). The presumption of legitimacy is this, that a child born of a married woman is deemed to be legitimate, it throws on the person who is interested in making out the illegitimacy, the whole burden of proving it. The law presumes both that a marriage ceremony is valid, and that every person is legitimate. Marriage or filiation (parentage) may be presumed, the law, in general, presuming against vice and immorality”.³⁸ Emphasising the test of ‘eminent need’ for conducting a DNA test, in *Bhawani Prasad Jena*, reconciling the observations in the *Goutam Kundu* and the *Sharda* cases, the apex

35 *Id.* at para 5.

36 *Id.* at para 6.

37 *Banarsi Dass v. Teeku Dutta*(2005) 4 SCC 449 : 2005 SCC OnLine SCC 878 : 2005 (3) CTC 227 (SC).

38 *Id.* at para 10.

court observed that there is no conflict in both judgments.³⁹ The same ratio was also upheld in the *Dipanwita Roy* case, and a DNA test for paternity determination was permitted even in the divorce petition.⁴⁰ However, Justice J.S. Khehar considered it just and appropriate to record a caveat to the effect that the wife may refuse to comply with the High Court direction for the DNA test but in that case, the adverse presumption may be drawn against the party under section 114 of the Indian Evidence Act, 1872.⁴¹

In *Ashok Kumar*, the court observed that “In such kind of litigation where the interest will have to be balanced and the test of *eminent need* is not satisfied our considered opinion is that the protection of the right to privacy of the Plaintiff should get precedence”.⁴² The court kept on deliberating that “When the plaintiff is unwilling to subject himself to the DNA test, forcing him to undergo one would impinge on his personal liberty and his right to privacy. Seen from this perspective, the impugned judgment merits interference and is set aside,” and the order passed by the trial court was restored.⁴³

In *XXX v. XXX*,⁴⁴ the high court permitted a DNA test for paternity determination of the child, as desired by the husband to establish adulterous conduct of his wife. On the contrary, in *Deepali Shrimaan Pednekar v. Captain Pednekar Shriman Dnyaneshwar*,⁴⁵ the wife filed a petition to examine DNA led paternity to establish admission for her adulterous sexual conduct. The husband opposed the petition on the ground that presumption under section 112 manifestly establishes that a child born during the marriage is proof of legitimacy, and a DNA test may forfeit the paramount interest of his child. However, the appellate court dismissed the Writ Petition. Refusing consent to give DNA by the female for ascertaining paternity may give relief to the alleged child for not branding him illegitimate.⁴⁶

39 *Bhabani Prasad Jena v. Convenor Secretary, Orissa State Commission for Women* (2010) 8 SCC 633 at paras 22 and 23 : (2010) 3 (Civ) 501 : (2010) 3 (Cri) 1053 : 2010 SCC OnLine SCC 826 at para 23, emphasising on the ‘eminent need’ for conducting DNA test, the apex court had observed, “There is no conflict in the two decisions of this Court, namely, Goutam Kundu [(1993) 3 SCC 418 : 1993 SCC (Cri) 928] and Sharda [(2003) 4 SCC 493]. In Goutam Kundu it has been laid down that courts in India cannot order blood test as a matter of course and such prayers. cannot be granted to have roving inquiry; there must be strong prima facie case and the court must carefully examine as to what would be the consequence of ordering the blood test. In Sharda [(2003) 4 SCC 493] while concluding that a matrimonial court has power to order a person to undergo a medical test, it was reiterated that the court should exercise such a power if the applicant has a strong prima facie case and there is sufficient material before the court. Obviously, therefore, any order for DNA test can be given by the court only if a strong prima facie case is made out for such a course.”

40 *Dipanwita Roy v. Ronobroto Roy* (2015) 1 SCC 365 : (2015) 1 SCC (Cri) 683 : (2015) 1 SCC (Civ) 495 : 2014 SCC OnLine SC 831.

41 *Id.* at para 18. Also see: *Preeti Miraniyav. Sanjay Miraniya* 2021 SCC OnLineChh 430 : (2021) 3 CGLJ 430 at para 9.

42 *Supra* note 33 at para 16.

43 *Id.* para 19.

44 2021 SCC OnLine Ker 3458 : (2021) 5 KLT 350. Also see: *Dipanwita Roy v. Ronobroto Roy* (2015) 1 SCC 365 : AIR 2015 SC 418.

45 2021 SCC OnLine Bom 3409.

46 *Vinit Minj v. Neeta Prajapati* 2021 SCC OnLineChh 437 : (2021) 3 CGLJ 265 : (2021) 221 AIC (Sum 24) 12.

IV DNA EVIDENCE IN CRIMINAL ADJUDICATION

Biological content recovered from various sources may be a potent link to tie up the accused with the crime.⁴⁷ Earlier, Serological studies were employed to ascertain that bloodstain belongs to humans and also to identify blood groups for matching.⁴⁸ DNA is predominantly an advanced forensic technique for human identification with the help of biological tissues.⁴⁹ DNA plays a vital role in body offences, particularly where biological samples may be gathered to compare for identifying a human being be it an accused or a victim of a crime even if facial identification became impossible due to various factors.⁵⁰ However, for such scenario, corroboration by other witnesses and impartial forensic evidence, recoveries, CCTV footage, the accused last seen together with victim etc. become significant to prove criminal allegations beyond reasonable doubt to arrive at an irresistible judicial conclusion. DNA plays a stellar role in determining guilt or innocence in bodily offences such as rape⁵¹ and murder.⁵² Since, the last three decades, DNA has emerged as a panacea for the investigation of penetrative sexual assault.⁵³ The Apex Court of India has explained the use of Y-STR for rape investigation as under:⁵⁴

Y-STR screening is manifestly useful for corroboration in sexual assault cases and it can be well used as exculpatory evidence and is extensively relied upon in various jurisdictions throughout the world. Science and Researches have emphatically established that chances of degradation of the “Loci” in samples are lesser by this method and it can be more effective than other traditional methods of DNA analysis. Although Y-STR does not distinguish between the males of the same lineage, it can, nevertheless, may be used as strong circumstantial evidence to support the prosecution case. Y-STR techniques of DNA analysis are

- 47 *Jaseer M.K. v. State of Kerala* 2021 SCC OnLine Ker 1672 at para 51 : (2021) 6 KLT (SN 23) 24; *Ranjeet v. State Govt. of NCT of Delhi* 2021 SCC OnLine Del 4118 at para 5; *Kanu Mandal v. State, represented by the Inspector of Police* (2021) SCC OnLine Mad 6031 at para 39.
- 48 *Marimuthu v. State represented by Inspector of Police* 2021 SCC OnLine Mad 6373.
- 49 *State of Maharashtra v. Sagar Vishwanath Borkar* 2021 SCC OnLine Bom 2725 at para 152; *Kadali Durgarao v. Kadali Surya Kumari* 2021 SCC OnLine AP 110 : 2021 Cri LJ 3158.
- 50 *State of Maharashtra v. Vishnu* 2021 SCC OnLine Bom 251 at para 9 [xii].
- 51 *Murugan v. State, rep by Inspector of Police* 2021 SCC OnLine Mad 6012 at para 14; *Ranjeet Naik v. State Govt. of NCT of Delhi* 2021 SCC OnLine Del 3988 at para 8; *Ranjeet Shahaji Gadev. State of Maharashtra* 2021 SCC OnLine Bom 3061 at para 50; *Nazil v. State of U.P.* 2021 SCC OnLine Mad 6012 at para 9.
- 52 *Kanu Mandal v. State, Represented by Inspector of Police* 2021 SCC OnLine Mad 6031 at para 39; *Abu Rahbar Hasan Khan v. State of Maharashtra* 2021 SCC OnLine Bom 3702 at para 53.
- 53 *Jitendra Rajmohan Mazi v. State of Maharashtra* 2021 SCC OnLine Bom 495 : 2021 Cri LJ 3324. Also see: *State of U.P.* 2021 SCC OnLine All 431 at para 48 : (2021) 116 ACC 491 : (2021) 5 All LJ 181; *Mukesh Kumar v. State of H.P.* 2021 SCC OnLine HP 4776.
- 54 *Ravi S/o Ashok Ghumarev. State of Maharashtra* (2019) 9 SCC 622 at para 36. Also see: *In Reference (Suo Moto) v. Yogesh Nath* 2021 SCC OnLine MP 1628 at para 90.

both regularly used in various jurisdictions for the identification of offenders in cases of sexual assault and also as a method to identify suspects in unsolved cases.

In *Mukesh v. State (NCT of Delhi)*,⁵⁵ the Supreme Court held that “DNA technology accurately identifies criminals. DNA profiling is now a statutory scheme under Section 53-A CrPC and such profiling is a must in case of examination of rape survivors. DNA report deserves to be accepted unless it is dented. If the sampling is proper and if there is no evidence of tampering of samples, a DNA Test report is to be accepted. DNA analysis is hundred percent accurate and at present a predominant forensic technique for identifying criminals.” In the same judgment, Dipak Mishra J. reiterated:⁵⁶

DNA technology as a part of Forensic Science and scientific discipline not only provides guidance to the investigation but also supplies the court accrued information about the tending features of identification of criminals. The recent advancement in modern biological research has regularised Forensic Science resulting in radical help in the administration of justice. In our country also like several other developed and developing countries, DNA evidence is being increasingly relied upon by courts. After the amendment in the Criminal Procedure Code by the insertion of Section 53-A by Act 25 of 2005, DNA profiling has now become a part of the statutory scheme. Section 53-A relates to the examination of a person accused of rape by a medical practitioner.

On evidentiary strength of DNA, the Madras High Court observed, “This one scientific evidence [DNA] is so overwhelming to cover up all the minor deficiencies which had been pointed out by us earlier”.⁵⁷ The Court kept on observing, “After the advent of DNA test and the acceptance of the same by incorporation of Section 53A of Criminal Procedure Code with effect from 23.06.2006, it has become necessary for the prosecution to go in for a DNA test especially in rape cases”.⁵⁸ Despite star witnesses being unfriendly with the prosecution, a conviction may uniquely be awarded on the forte of a positive DNA report.⁵⁹ However, quality control and quality assurance of DNA samples and authenticity and fairness in procedures involved therein are vital pre-requisite for the admissibility of DNA reports.

55 *Supra* note 24 at p. 28.

56 *Id.* at para 216. Also see: *Krishan Kumar Malik v. State of Haryana* (2011) 7 SCC 130 at para 44; *Ubhan Yadav v. State of U.P.* 2021 SCC OnLine All 444 : (2021) 4 All LJ 621; *Shamim Anwar Khan v. State of Maharashtra* (2015) 3 AIR Bom R (Cri) 51 : 2015 SCC OnLine Bom 6045.

57 *Supra* note 50 at para 23. *Murugan*

58 *Ibid.*

59 *Rajkishorsingh Ranvir Singh Tomar v. State of Maharashtra* 2021 SCC OnLine Bom 326 at para 4 : (2021) 2 Bom CR (Cri) 351.

In *Joginder v. State of Himachal Pradesh*,⁶⁰ DNA on the exterior of condom matched with the genetic material of victim, whereas, DNA obtained from the inner portion of condom, entirely matched with DNA of the accused. In the *Chaitanya Barman* case,⁶¹ the high court took adverse presumption against the prosecution to acquit the accused since the minor prosecutrix denied conducting a DNA test of the child borne to her. The Apex Court in umpteen number of cases has reiterated that DNA is mandatory to conduct in rape cases,⁶² but still, police are neither abiding with law nor the court directions.⁶³

A revision was filed before Allahabad High Court, where the demand to conduct a DNA test was requested by the father of a minor girl, aged about 14, who got impregnated after rape nearly seven months ago by a juvenile.⁶⁴ The delinquent juvenile filed an application to conduct DNA. The court denied DNA observing that the defence will get an opportunity at the stage of section 313 CrPC; and subjecting the minor survivor for DNA test would further delay the proceedings and obstruct expeditious disposal of trial. It was also raised that DNA test cannot be done without explicit consent of the prosecutrix under section 164A of the procedure code; and rape allegation cannot be nullified by merely conducting DNA after a long delay of the incident of rape. Connecting personal liberty with DNA test, the apex court in the case of *Ashok Kumar v. Raj Gupta*⁶⁵ has observed “The appellant (plaintiff) as noted earlier, has brought on record the evidence in his support which in his assessment adequately establishes his case. His suit will succeed or fall with that evidence, subject of course to the evidence adduced by the other side. When the plaintiff is unwilling to subject himself to the DNA test, forcing him to undergo one would impinge on his

60 2021 SCC OnLine HP 4433 at para 8.

61 *Chaitanya Barman v. State of West Bengal* 2021 SCC OnLine Cal 2429 at para 11.

62 *Krishna Kumar Mallik v. State of Haryana* (2011) SCC 130 : (2011) SCC (Cri) 61: 2011 SCC OnLine SC 869. At page 140, para 44, the apex court observed, “Now, after the incorporation of Section 53-A in the Criminal Procedure Code w.e.f. 23-6-2006, brought to our notice by the 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 CrPC the 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”. Also see: *Hemudan Nanbha Gadhi v. State of Gujarat* (2019) 17 SCC 523 : (2020) 3 (Cri) 400 : 2018 SCC OnLine SC 1688.

63 *Shajal Rai v. State of H.P.* 2021 SCC OnLine Sikk 33 at para 23 : 2021 Cri LJ 3073.

64 *Gulafsa Begum v. State of U.P.* 2021 SCC OnLine All 850.

65 (2021) 5 KLT 697 at para 17; *Abhilash R. Nair v. Sreebha P.S.* 2021 SCC OnLine Ker 5428; *Anandamay Bag v. State of West Bengal* 2007 SCC OnLine Cal 249 : 2007 (4) CHN 470, in this case prosecution prayed the court to allow further investigation in order to conduct DNA test at the stage when entire evidence was closed and entire defense was revealed. The court dismissed the prosecution demand to conduct DNA. The Supreme Court in *Yedla Srinivasa Rao v. State of Andhra Pradesh* (2006) 11 SCC 615 emphasize that merely because the petitioner had offered to conduct DNA Test it would not mean that the complainant and the minor child can also be subjected to such test without their consent. It was observed that the consent of the complainant and the consent of the minor child was relevant.

personal liberty and his right to privacy.” The Allahabad high in the petition stated above also rejected the contention to determine DNA based paternity.⁶⁶ DNA also played a vital role in deciding bail applications, and the absence of DNA sampling or negative DNA match was observed as one of the important grounds for granting bail.⁶⁷

Handling issue of the elopement of girls

In India many adolescent girls willingly elope with their paramours, cohabit, get married and impregnated; but parents of these girls frequently slap criminal cases against husbands of their minor daughters.⁶⁸ Defiantly, 50% escalation in child marriage was observed during 2020 counting over 24 million minor brides as reported in ‘Crime in India’.⁶⁹ However, only 785 cases were registered under the Prohibition of Child Marriage Act, 2006.⁷⁰ It is an irony contravening child rights that if parents solemnized child marriage, it is socio-legally accepted, and celebrated, but if a minor marries by her/his choice, their parents register cases under the POCSO Act, 2012 even if the groom is a minor. The apex court has declared that there is no exception to rape if a person is below 18, irrespective of marital status or gender, since it constitutes statutory rape.⁷¹ However, the legal regime in India enables married minors to validate *ab initio* illegality of their marriage. Sexual conduct of a minor being a biological phenomenon cannot be regulated merely by fixing a certain age for marriage. Indeed, India must ponder for a legal device such as the ‘Age Differential Clause’ like Romeo-Juliet

66 *Supra* note 63 at para 15 & 16. *Gulafsa Begum*

67 *Bharat Gujar v. State of M.P.* 2021 SCC OnLine MP 2105 at para 4; *Jeewan Kumar v. State of HP* 2021 SCC OnLine HP 8012 at para 4; *Betu v. State of Madhya Pradesh* 2021 SCC OnLine MP 33; *Santosh Pargi v. State of Madhya Pradesh* 2021 SCC OnLine MP 97; *Gurtej Singh v. State of Punjab* 2021 SCC OnLine P&H 452 at para 2; *Pinku Kumar v. State of H.P.* 2021 SCC OnLine HP 5414 at para 6; *Jobin v. State of Kerala* 2021 SCC OnLine Ker 5414 at para 4; *Neelam Dhurvev. State of Chhattisgarh* 2021 SCC OnLineChh 1395 at para 6; *Dharmendra Vishwakarma v. State of Madhya Pradesh* 2021 SCC OnLine MP 671 at para 7; *Pappu v. State of M.P.* 2021 SCC OnLine MP 1421 at para 7; *Neelam Dhurvev. State of Chhattisgarh* 2021 SCC OnLineChh 1395; *Ashok Kumar v. State of H.P.* 2021 SCC OnLine HP 4446 at para 8; *Lekh Ram v. State of H.P.* 2021 SCC OnLine HP 4694 at para 4; *Vikky v. State of H.P.* 2021 SCC OnLine HP 5496 at para 19; *Mukesh Kumar v. State of H.P.* 2021 SCC OnLine HP 4709; *Rajeev v. State of H.P.* 2021 SCC OnLine HP 4878 at para 4; *Rakesh v. State of H.P.* 2021 SCC OnLine HP 4972 at para 11; *Tanni v. State of M.P.* 2021 SCC OnLine MP 1940 at para 6; *Deepak Tomar v. State of M.P.* MCRC-49075 of 2021; *Kishan v. State of M.P.* (2021) SCC OnLine MP 2123 at para 4; *Jasbir Dabas v. State (NCT of Delhi)* (2021) SCC OnLine Del 5108; *Suraj v. State (NCT of Delhi)* 2021 SCC OnLine Del 5263 at para 2.

68 *Ram Sevak v. State (NCT of Delhi)* 2021 SCC OnLine Del 5195.

69 Child marriage involves marriage of a boy below 21 years and girl below 18 years. However, India is processing a legal regime to enhance the marriageable age to 21 for girls also. Recently, the Prohibition of Child Marriage (Amendment) Bill, 2021 has been introduced in the Parliament.

70 Crime in India – 2020, Annual Report published by the National Crime Record Bureau, New Delhi, p. 319.

71 *Independent Thought v. Union of India* (2017) 10 SCC 800 : (2018) SCC (Cri) 13 : 2017 SCC OnLine SC 1222. Also see: GK Goswami & Siddhartha Goswami, “‘No’ to Marital Rape Exemption in Indian Law: Stepping Stone to Gender Justice”, 7 *Journal of Law Teachers of India (JOLT-I)* 18-37 (2017-2018).

clause of the United States for addressing such critical scenarios.⁷² Sexual exploitation on the behest of false promise to marry is yet another factor,⁷³ where prosecution suffers to prove the allegations of sexual intercourse against the consent of the prosecutrix if she is major in age.

Rape related pregnancy (RRP) and DNA based parentage determination

Repetitive penetrative sexual assault mainly by the acquainted persons and close relatives including stepfather, where protector became predator, are of grave concern.⁷⁴ In the plethora of cases, minor impregnated victims, due to delayed detection of pregnancy, gave birth to their children.⁷⁵ Mentally challenged females irrespective of their age are the most vulnerable section for repetitive sexual exploitation resulting in pregnancy with delayed detection.⁷⁶ In rape investigation, a DNA test is aimed to trace the perpetrator, and not to decide paternity *per se*.⁷⁷ DNA plays a significant role particularly in connecting the foetus with the male partner.⁷⁸ However, linking biological fatherhood with the perpetrator by DNA is a confirmatory test for rape, but a negative DNA report may not necessarily certify the innocence of an accused. DNA is conducted to ascertain the biological parents of the child, which may serve as evidence in either civil or criminal matters.⁷⁹

- 72 David M. Bieri and Kristen M. Budd, "Romeo, Juliet and Statutory Rape" *Sexual Abuse: A Journal of Research and Treatment* 1-26 (2016), DOI: 10.1177/1079063216658451. Also see: GK Goswami, PhD dissertation titled "Enabling Access to Justice in Sexual Offences: Role of DNA Evidence", Tata Institute of Social Sciences, Mumbai, 48 (2018). Available at: <http://hdl.handle.net/10603/214507>
- 73 *Bharat Bajaj v. State of Chhattisgarh* 2021 SCC OnLine Chh 458 at para 16 : (2021) 3 CGLJ 522.
- 74 *Chandrashekhar v. State of Maharashtra* 2021 SCC OnLine Bom 4545 at para 3; *State of Maharashtra v. Vishnu* 2021 SCC OnLine Bom 251; *Sunil Kumar v. State of NCT of Delhi* 2021 SCC OnLine Del 2391; *Lalmalsom Kaipeng v. State of Maharashtra* 2021 SCC OnLine Bom 4545 at para 3; *Rajan K.C. v. State of Kerala* 2021 SCC OnLine Ker 2572 at para 15 (2021) 4 KLT 274; *Shabana Begum v. State of Telangana* 2021 SCC OnLine TS 1205 at para 5; *Unnikrishnan v. State of Kerala* 2021 SCC OnLine Ker 3696 at para 5; *Keethiraj v. State rep by Inspector of Police* 2021 SCC OnLine Mad 6557.
- 75 *Chandrashekhar v. State of Maharashtra* 2021 SCC OnLine Bom 4545 at para 3; *Cho Mingur Lepcha v. State of Sikkim* 2021 SCC OnLine Sikk 174 at para 3. at para 8; *Vipul Laxmanbhai Jinjvadiyav. State of Gujarat* 2021 SCC OnLine Guj 472; *ABC v. State of Maharashtra* 2021 SCC OnLine Bom 419 : (2021) 2 AIR Bom R (Cri) 415. Also see: *Rubina Kasam Phansopkar v. State of Maharashtra*, 2020 SCC OnLine Bom 765; "ABC" through her *Guardian v. State of Maharashtra*, (2018) 4 Mah LJ 374; *Pramod A. Solankev. Dean of B.J. Govt. Medical College & Sasoon Hospital, Pune*, 2020 SCC OnLine Bom 639; *Z v. State of Bihar*, (2018) 11 SCC 572; *Suchita Srivastava v. Chandigarh Administration*, (2009) 9 SCC 1; *Mikal Bhujel v. State of Sikkim* (2021) SCC OnLine Sikk 43 at para 11 : (2021) 224 AIC 573.
- 76 *X v. State of Madhya Pradesh Writ Petition No. 12155/2021* decided by MP high court on July 14, 2021.
- 77 *Supra* note 63 at para 15. *Gulafsa Begum*
- 78 *Balamurugan v. Inspector of Police* 2021 SCC OnLine Mad 1240 at para 6 : (2021) 1 MWN (Cri) 555; *Rajib Sharma v. State of Tripura* 2021 SCC OnLine Tri 299 at para 4; *Kerala State Legal Services Authority v. Union of India* 2021 SCC OnLine Ker 3497 at para 8.
- 79 *Priyanka Sahav. State of Tripura* 2021 SCC OnLine Tri 625 at para 4.

In *XXX v. Union of India*,⁸⁰ the father approached to terminate the pregnancy of his 13 years old daughter, who was abused sexually by his own brother. The apex court held that “woman’s right to make reproductive choices is also a dimension of ‘personal liberty’ as understood under Article 21 of the Constitution”.⁸¹ Reproductive choices can be exercised to procreate as well as to abstain from procreating, and this can only be ensured if a woman is empowered to partake or refuse in sexual activity or insistence on the use of contraceptive methods or to timely terminate the foetus.⁸²

Pregnancy of twenty weeks is legally permitted for termination under the Medical Termination of Pregnancy Act, 1971; however, court approval is obligatory for more advanced pregnancy.⁸³ In case of termination of normal pregnancy, a satisfaction of doctor for health hazards of mother or foetus is required; but, a rape survivor, as a matter of right, can demand termination of RRP, if approved by a competent medical practitioner. Considering the strength of DNA, Delhi High Court in 1999 ordered for DNA test on the foetus of a rape survivor.⁸⁴ The biological samples of the mother and foetus must be preserved since DNA profiling plays a significant role in connecting the perpetrator with the foetus.⁸⁵ DNA immensely helped in establishing biological linkages with the foetus or the child born out of such sexual abuse.⁸⁶

Threat to rape survivor for non-disclosure of facts related to offences remains a major cause for delay in reporting as well as late detection of pregnancy.⁸⁷ Incidentally, there are cases where the prosecution failed to conduct DNA of the child borne to the prosecutrix.⁸⁸ On the forte of credible sole testimony of the minor prosecutrix, the conviction was upheld by the high court despite her refusal to undergo a DNA test of herself and newborn to establish paternity of rapist.⁸⁹ The Supreme Court has clarified

80 2021 SCC OnLine Ker 1800 : (2021) 3 KLT 279 : (2021) 3 KLJ 82 : AIR 2021 (NOC 737) 295.

81 *Suchita Srivastava v. Chandigarh Admn.* (2009) 9 SCC 1 at para 9. Also see: *Meera Santosh Pal v. Union of India* (2017) 3 SCC 462.

82 *Roe v. Wade* 410 US 113 (1973) : 35 L. Ed. 2d 147.

83 Explanation 2 of section 3(2), of the Medical Termination of Pregnancy (Amendment) Act, (No. 8 of 2021). Also see: *Keshar Bai v. Public Health and Family Welfare Department* 2021 SCC OnLine MP 942.

84 *Geeta Sahav. NCT of Delhi* [1999] 1 JCC 101.

85 *XXX v. Union of India* 2021 SCC OnLine Ker 808; *Rajkishorsingh Ranvir Singh Tomar v. State of Maharashtra* 2021 SCC OnLine Bom 326 at para 6 : (2021) 2 Bom CR (Cri) 351; *Mansi through her mother v. State of Haryana* 2021 SCC OnLine P&H 717 at para 8 : (2021) 2 RCR (Civ) 625; *ABC v. State of Chhattisgarh* 2021 SCC OnLine Chh 1728 at para 9; *Velunatchiyar v. Government of Tamil Nadu* 2021 SCC OnLine Mad 5047 at para 9; *XXX v. Union of India* 2021 SCC OnLine Ker 3522 at para 7; *Malaisamy v. State Represented by the Inspector of Police* 2021 SCC OnLine Mad 5467 at para 18; *A Minor Girl v. State of Madhya Pradesh* 2021 SCC OnLine MP 1901 at para 8; *Kranti v. Post Graduate Institute of Medical Education and Research (PGIMER)* 2021 SCC OnLine P&H 2704 at para 2(5); *Gurpreet Kaur v. State of Punjab* 2021 SCC OnLine P&H 2731 at para 2(5).

86 *Robin Mathew v. State of Kerala* 2021 SCC OnLine Ker 4720 at para 15. In this case the high court has detailed discussion on determination of age of minor.

87 *Deepak v. State of Haryana* (2015) 4 SCC 762.

88 *Suhail Ahmed v. State of NCT of Delhi* 2021 SCC OnLine Del 2662 at para 8.

89 *Swapan Mandal v. State of West Bengal* 2021 SCC OnLine Cal 2007 at para 33.

that “From the provisions of Section 53A of the Code and the decision of this Court in *Krishan Kumar* (supra) [(2011) 7 SCC 130] it does not follow that failure to conduct the DNA test of the samples taken from the accused or prove the report of DNA profiling as in the present case, would necessarily result in the failure of the prosecution case. As held in *Krishan Kumar* (para 44) Section 53A really “facilitates the prosecution to prove its case”. A positive result of the DNA test would constitute clinching evidence against the accused, however, if the result of the test is in the negative i.e. favouring the accused or if DNA profiling had not been done in a given case, the weight of the other materials and evidence on record will still have to be considered. It is to the other materials brought on record by the prosecution that we may now turn to.”⁹⁰In some cases, the trial court exonerated the rape accused despite the DNA of the accused matched with the aborted foetus of the minor prosecutrix.⁹¹

Conviction in absence of DNA

Rape is a crime usually committed in isolation, leaving limited scope for having an eyewitness. It is settled law in India that conviction can be awarded based on the credible and unblemished sole testimony of the prosecutrix despite the absence of sperm or DNA match.⁹²In a criminal trial, the significance of expert opinion is paramount, but it is not necessary that the absence thereof would *ipso facto* affect the trial to hold conviction provided other circumstantial evidence are sufficient to establish guilt beyond a reasonable doubt.⁹³DNA may not be conducted genuinely in some cases due to various reasons such as long delay in reporting, non-ejaculation, absence of spermatozoa due to washing the person of the victim.⁹⁴There may not be any biological material on the person or belongings of the victim of crime,⁹⁵ or mortal remains may be too decomposed to yield the desired quantum of DNA.⁹⁶In non-penetrative sexual assault, biological footprints including saliva, nail clips, dermal fingerprints etc. may also be looked for, on the person of a victim or crime scene.⁹⁷

In *State of Maharashtra v. RamkiratMunilal Goud*,⁹⁸ the death penalty was confirmed by the high court in case of rape with murder, though DNA did not match. In another case, the prosecution failed to conduct DNA in rape with the murder of a

90 *Sunil v. State of M.P.* (2017) 4 SCC 393 at para 3.

91 *State, rep. by the Inspector of Police v. Siva Kumar* 2021 SCC OnLine Mad 5631.

92 *Kalicharan v. State (G.N.C.T. of Delhi)* 2021 SCC OnLine Del 3472 : (2021) 220 AIC 322; *State of Maharashtra v. Vishnu* 2021 SCC OnLine Bom 251; *Jitender Kumar Goswami v. State (NCT of Delhi)* 2021 SCC OnLine Del 3283 at para 5; *State of Maharashtra v. Vishnu* 2021 SCC OnLine Bom 251.

93 *Suleman Ansari v. State of Jharkhand* 2021 SCC OnLineJhar 489 at para 39; *State of Maharashtra v. RamkiratMunilal Goud* 2021 SCC OnLine Bom 4562 at para 46; *Anwar Ansari v. State of Jharkhand* 2021 SCC OnLineJhar 490 at para 43; *Deepak v. State of Delhi* 2021 SCC OnLine Del 958 at para 8.

94 *Balwant v. State of H.P.* 2021 SCC OnLine HP 4635 at para 10.

95 *Devender Kumar v. State Govt. of NCT of Delhi* 2021 SCC OnLine Del 2878 at para 10.

96 *Basanta Panda v. State of Odisha* 2021 SCC OnLine Ori 958 at para 5; *Dattaram Hari Pandarev. State of Maharashtra* 2021 SCC OnLine Bom 3616 at para 30.

97 *Dalip v. State (NCT of Delhi)* 2021 SCC OnLine Del 2695 at para 6.

98 2021 SCC OnLine Bom 4562.

minor, the death penalty awarded by the trial court was remitted to life imprisonment by the high court.⁹⁹In *Dashrath v. the State of Maharashtra*,¹⁰⁰ the high court upheld the conviction in the rape case although the DNA report was absolving the accused from the paternity of foetus carried by a deaf and dumb prosecutrix of biological age about 16. Defense was also prodded for not conducting DNA, and the court also observed that investigation was deficient on this part.¹⁰¹

The direction of Court for DNA sample

DNA test does not figure in the Indian procedural framework except sections 53-A and 164-A of the CrPC especially for the offence of rape. Further, 164-A desires obligatory consent from the rape survivor or her parents/guardian both to undergo the medical examination of her person or to take a DNA sample.¹⁰²The Supreme Court as well as several High Courts have observed that no Court can bind the prosecutrix to get the DNA test conducted. It is probable that an adverse inference can be drawn against the prosecutrix on refusal of the prosecutrix to undergo for DNA Test, but no DNA Test can be conducted of the prosecutrix without her consent¹⁰³ observed the high court. In case the prosecutrix is killed after rape, then the issue of consent does not arise for conducting a medical exam (post mortem) and collection of DNA samples. The apex court in the *Kathi David Raju*¹⁰⁴ held that a DNA test cannot be a step towards a roving or fishing inquiry on a person and there must be “reasonable grounds for believing that an examination of his person will afford evidence as to the commission of an offence”.

The phrase of section 53-A of the procedure code, “When a person is arrested on the charge of committing an offence of rape or an attempt to commit rape...”, empowers the prosecution to conduct medico examination of arrested accused by a medical practitioner and to collect his blood sample for DNA profiling. The consent of the rape accused of medical exam or DNA sample is not desired. However, the strictly legal interpretation of the phrase ‘a person is arrested’ of section 53-A breeds legal conflict, especially when an accused is asked for giving a DNA sample who either was not arrested or has been released on bail. This procedural enigma demands legal remedy.

Examination of Forensic Expert in the Court

Bombay High Court in the *Rajkishorsingh Ranvirsing Tomar*, held that “It is not incumbent on the prosecution to examine, unless the Court is moved by the accused for issuing summon to the expert or when Court, may in the circumstances deem just

99 *State of Odisha v. Sunil Nayak* 2021 SCC OnLine Ori 1629 at para 44.

100 2021 SCC OnLine Bom 2921.

101 *Kiran Mir v. State of West Bengal* 2021 SCC OnLine Cal 2210 at para 23.

102 *Srinivasa Rao v. State of Andhra Pradesh* (2006) 11 SCC 615; *Harsh Gupta v. State of M.P.W.P.* No. 5428/2019, Madhya Pradesh High Court, decided on March 15, 2019.

103 *Supra* note 63 at para 6. *Gulafsa*. Also see: *G. Vasanthi v. M. Muneeshwaran* 2019 SCC OnLine Mad 1553 : (2019) 2 CTC 426 : 2019 AIR CC 2510 : (2019) 1 Mad LJ 498 2019 (2) LW 186. : (2019) 201 AIC 746 : (2019) MWN (Civil) 210 : (2019) 2 HLR 548.

104 *Kathi David Raju v. State of Andhra Pradesh* (2019) 7 SCC 796.

and proper to summon the expert. Therefore, to be stated that the provisions of Section 293 are not controlled or regulated by the provisions under Section 294 of the Code".¹⁰⁵

Dead body identification

Forensic science mainly hinges on two basic principles, firstly Locard's Exchange Principle¹⁰⁶, Kirk principle of individuality.¹⁰⁷ Criminalistics is the science of individualization.¹⁰⁸ In civil and criminal adjudication, identification of human dead bodies presents a challenge due to various compelling reasons. In addition to other forensic tools like skull superimposition, odontology, pre-known bone deformity etc., DNA is also a potent tool to solve this riddle, especially by matching the DNA profile of the questioned human body or mortal remains with the family members.¹⁰⁹ It is unfortunate not to take DNA samples from unidentified dead bodies to identify them, which adversely affect the case of the prosecution.¹¹⁰

V NON-DNA EVIDENCE FOR CORROBORATION

Forensic evidence other than DNA, for many decades, have enormously served the cause of justice. Identification at night by the acquainted person may also be possible by various indices such as voice, silhouette, shadow, and gait.¹¹¹ During the extant Survey of 2021, the role of various non-DNA forensic evidence has been examined and briefly discussed below.

105 *Id.* at para 4. Also see: *Dasu v. State of Maharashtra* 1985 SCC OnLine Bom 48 : (1985) 2 Bom CR 168 : 1985 Cri LJ 1933.

106 Edmond Locard (1877-1966) principle says "Every contact leaves a trace", which helps in identification. Locard's publications make no mention of an "exchange principle", although he did make the observation "Il est impossible au malfaiteur d'agir avec l'intensité que suppose l'action criminelle sans laisser des traces de son passage." (It is impossible for a criminal to act, especially considering the intensity of a crime, without leaving traces of this presence.). The term "principle of exchange" first appears in *Police and Crime-Detection*, in 1940, and was adapted from Locard's observations.

107 Paul L. Kirk, "The Ontogeny of Criminalistics" 54(2) *Journal of Criminal Law and Criminology* 235-238 (1963). The principle of individuality attributed to Paul L Kirk (1963), is regarded as the building block for forensic science. Individuality implies that every entity, whether person or object, can only be identical to itself and so is unique. No two objects whether natural or artificial can be exactly the same.

108 *Id.* at p. 236.

109 *Ramakant Gawas v. State through Police Inspector* 2021 SCC OnLine Bom 101 at para 27; *Shamsudheenv. State of Kerala* 2021 SCC OnLine Ker 1533 at para 11; *Yaser Arafathv. State represented by the Inspector of Police* 2021 SCC OnLine Mad 1095 : (2021) 1 LW (Cri) 497 at para 24; *Basudev Mondal v. State of West Bengal* 2021 SCC OnLine Cal 479; *Basudev Mondal v. State of West Bengal* 2021 SCC OnLine Cal 479 : 2021 SCC OnLine Cal 1646; *A. Antony Yagappav. Union of India* 2021 SCC OnLine Mad 2453 at para 4; *Punja Pandurang Godhade v. State of Maharashtra* 2021 SCC OnLine Bom 3021 at para 11; *Ankit Chaudhary v. State (Govt. of NCT of Delhi)* 2021 SCC OnLine Del 4677 at para 4; *Kanhaiya Chaudhary v. State of Jharkhand* 2021 SCC OnLine Jhar 738 at para 14 : (2021) 4 JBCJ 487 (HC).

110 *Urmiladeviv. State of Rajasthan* 2021 SCC OnLine Raj 692 at para 7; *Chandrasekhar Digal v. State of Kerala* 2021 SCC OnLine Ker 4057 at para 3. Also see: *Lokniti Foundation v. Union of India* (2021) 13 SCC 622 : (2016) 1 SCC (Cri) 667 : 2014 SCC OnLine SC 1104; .

111 *Pruthiviraj Jayantibhai Vanol v. Dinesh Dayabhai Vala* 2021 SCC OnLine SC 493 at para 12. Also see: *Chet Ram v. State of U.P.* 2021 SCC OnLine All 663 at para 16.

DermaI FingerprInt

Fingerprints are impressions left on surfaces by the friction ridges on human fingers. Human identification by fingerprint is known as dactyloscopy or handprint identification and is based on comparison and pattern recognition. Fingerprints are the most credible expert opinion which perfectly distinguishes between chimeric twins, which may not be identified even by DNA profiles. Palm and thumb fingerprints are the most commonly used scientific applications for biometric purposes. Handprints are used to certify human identity on valuable securities, and further helps to detect a suspect by comparing with chance fingerprints.¹¹² In *Jaikam* case,¹¹³ the high court took adverse presumption against prosecution since the fingerprint report was not placed on record despite fingerprints of the accused having been collected. Lackadaisical approach of prosecution of avoiding disclosure of exculpatory evidence is a worrisome reality that warrants attention.

Voice Spectroscopy

Voice is a unique human attribute, which helps to identify an individual with the help of auditory analysis.¹¹⁴ Criminal cases of threat or intimidation, demand for bribe or ransom, hatching criminal conspiracy etc. may be linked to a perpetrator with help of voice matching in addition to other credible evidences. Voice identification by an acquaintance witness is more difficult than visual identification. Voice spectroscopy helps to match the questioned voice with the controlled voice sample of a suspect. Examining the nature of voiceprint, the high court observed, "Voice sample in a sense resemble fingerprints and handwriting, each person has a distinctive voice with characteristic features dictated by vocal cavities and articulates. The samples are collected after having permission in accordance with the law. The sample taken itself would not be evidence, rather they are for comparing the evidence already collected".¹¹⁵

Like other forensic evidence, the procedural protocol has to be observed strictly for recording and analysis of voice samples to adduce admissibility of expert opinion in the court of law. The chain of custody of forensic samples is of utmost importance to ensure integrity to protect from tampering or manipulation. The apex court, in *Ziyauddin Burhanuddin Bukhari v. Brijmohan Ramdass Mehra*,¹¹⁶ has culled out the following conditions for admissibility of voiceprint under section 3 of the Indian Evidence Act:

(a) The voice of the person alleged to be speaking must be duly identified by the maker of the record or by others who know it.

112 *Jagdish v. State of Madhya Pradesh* 2021 SCC OnLine MP 1485 at para 9(xiii).

113 *Jaikam Kham v. State of Uttar Pradesh* 2021 SCC OnLine SC 1256 at para 71.

114 *Yashwant Balasaheb Gavadev. State of Maharashtra* (2021) SCC OnLine Bom 3000 at para 5.

115 *Id.* at para 12. Also see: 87th Report of the Law Commission of India recorded its observation, "A voice print is a visual recording of voice. It mainly depends on the position of "formants". These are concentrates of sound energy at a given frequency. It is stated that their position in the "frequency domain" is unique to each speaker. Voice prints resemble finger prints, in that each person has a distinctive voice with characteristic features dictated by vocal cavities and articulates".

116 (1976) 2 SCC 17 at p. 26 para 19.

(b) Accuracy of what was recorded had to be proved by the maker of the record and satisfactory evidence, direct or circumstantial, had to be there so as to rule out possibilities of tampering with the record.

(c) The subjectmatter recorded had to be shown to be relevant according to rules of relevancy found in the Evidence Act.

Standing procedural legal framework in India has no mention of voice matching as expert evidence, hence the collection of samples from the suspect remained a legal challenge. Collection of voice samples is non-invasive, hence does not abridge the right against self-incrimination protected under Article 20(3) of the Indian Constitution.¹¹⁷The apex court in *Ritesh Sinha*¹¹⁸has empowered the Magistrate after holding that "...we unhesitatingly take the view that 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".¹¹⁹Despite the explicit judicial verdict, the accused continued to file petitions on the altar of violation of Article 20(3) resisting submitting voice samples during criminal proceedings.¹²⁰

In a few cases, courts have awarded convictions based on voiceprint as corroborative evidence.¹²¹The High Court of Mumbai set aside the conviction order of the court below demolishing the edifice of a corruption case after observing faults in transcripts of recorded conversations by police.¹²² The accused demanding bribe based on recorded conversation could not be identified flawlessly by prosecution despite that it being analysed and compared by an expert with a controlled voice sample of the accused. In yet another appeal of similar nature dealt by the same high court, the conviction was overturned due to various faults in prosecution case such as lack of FSL report to prove audio recording and the script of the recording being prepared in

117 *State of Mumbai v. Kathi Kalu Oghad* AIR 1961 SC 1808 : (1962) 3 SCR 10 : (1961) 2 Cri LJ 856. Also see: *H.M. Prakash @ Dali v. State of Karnataka* 2004 SCC OnLine Kar 162; *Ram Udagar v. State (NCT of Delhi)* 2021 SCC OnLine Del 4368 at para 28.

118 *Ritesh Sinha v. State of Uttar Pradesh* (2019) 8 SCC 1 : (2019) 3 SCC (Cri) 252 : 2019 SCC OnLine SC 956. Also see: *Ritesh Sinha v. State of Uttar Pradesh* (2013) 2 SCC 357 : (2013) 2 SCC (Cri) 748.

119 (2019) 8 SCC 1 at p. 956, para 27; GK Goswami and Aditi Goswami, "Obligated Voice Sampling: A Judicial Endorsement in *Ritesh Sinha v. State of Uttar Pradesh*" in *Journal of Indian Law Institute* Vol. 61(4) *Journal of Indian Law Institute*, 455-462 (2019).

120 *Kamal Pal v. State of Punjab* 2021 SCC OnLine P&H 1541 : (2021) 3 RCR (Cri) 735. Also see: *Daisy v. State of Kerala* 2020 (3) KHC 115 : (2020) 2 KLT 639; *Mahesh Lal v. State of Kerala* 2021 SCC OnLine Ker 4688; *Central Bureau of Investigation v. Ajay Kumar Gupta* 2021 SCC OnLine J&K 620; *Mukul Roy v. State of West Bengal* 2019 SCC OnLine Cal 4341 at para 12.

121 *Nilesh Dinkar Paradhkar v. State of Maharashtra* (2011) 4 SCC 143 : 2011 SCC OnLine SC 460. Also see: *Lochan v. State of Chhattisgarh* 2021 SCC OnLine SC 1249; *Ram Kumar Gupta v. State (NCT of Delhi)* 2021 SCC OnLine Del 4819 at para 17;

122 *Sunil Hirasingsh Rathod v. State of Maharashtra* 2021 SCC OnLine Bom 2364 at para 69 : (2021) 4 RCR (Cri) 122.

absence of the complainant. Thus, the high court observed discrepancies in recording voice samples of the accused and the complainant and the prosecution case did not meet desired conditions culled out by the apex court for admissibility of a tape-recorded statement.¹²³ The high court refused the admissibility of voice evidence in a bribe case because the prosecution failed to disclose the date of collection of voice samples from the accused and complainant. Neither memory card nor forensic report was proved during trial.¹²⁴ Thus, in auditory evidence, various procedural lapses are mostly contested by the defense.

The conversation stored in a compact disc is secondary evidence that requires a certificate under 65-B of the Indian Evidence Act. The high court set aside conviction holding that in absence of a 65-B certificate, the alleged conversation is not admissible.¹²⁵ Evidence of tape recorder does not violate section 25 of the Telegraph Act, 1885.¹²⁶ The high court held that power of the trial court under section 311 of CrPC to call a witness cannot be used to fill in the lacunae in prosecution evidence. The trial court recalled the complainant and the *Panch* for the seizure of memory card after arguments were advanced and written submissions were filed.¹²⁷

Deception detection techniques (DDTs)

Medical examination of a suspect constitutes a secondary search. On bodily integrity, Lord William had observed, “If it were permitted forcibly to take hold of a prisoner and examine his body medically for the purpose of qualifying some medical witness to give medical evidence in the case against the accused there is no knowing where such procedure would stop. ... Any such examination without the consent of the accused would amount to an assault and I am quite satisfied that the police are not entitled without statutory authority to commit assaults upon prisoners for the purpose of procuring evidence against them. If the legislature desires that evidence of this kind should be given, it will be quite simple to add a short section to the Code of Criminal Procedure expressly giving the power to order such a medical examination.”¹²⁸

Judiciary always yearn to identify deceit in court proceedings, since deception is anti-thesis to truth posing threat to justice. Various deception identifier technologies like Narco-analysis, Polygraph, and Brain mapping involve medical intervention on the person of a subject invading bodily integrity thereof. Layered Voice Analysis (LVA) is yet another technology enabling quick and effective decision making based on

123 *Ram Sing v. Col. Ram Sing* 1985 Supp SCC 611. Also see: *Devidas v. State of Maharashtra* 2020 SCC OnLine Bom 1041 at para 25.

124 *Satish Murlidhar Magar v. State of Maharashtra* 2020 SCC OnLine Bom 3356 at para 27.

125 *Raju ShantaramKakphalev. State of Maharashtra* 2021 SCC OnLine Bom 85 at para 14 : (2021) 3 Bom CR (Cri) 676.

126 *R.M. Malkani v. State of Maharashtra* (1973) 1 SCC 471 : 1973 SCC (Cri) 399 : 1973 Cri LJ 228 : AIR 1973 SC 157. Also see: *Devyani v. State of Maharashtra* 2021 SCC OnLine Bom 672 : (2021) 4 AIR Bom R 206 : (2021) 4 Bom CR 23.

127 *Nayna Rajan Guhagarkarv. State of Maharashtra* 2021 SCC OnLine Bom 1054 at para 6 : (2021) 3 AIR Bom R (Cri) 166.

128 *Bhondar v. Emperor* AIR 1931 Cal 601 at p. 602.

human speech analysis.¹²⁹ However, DDTs have been challenged in the court on inherent violations of fundamental rights. In addition, the ontology of psycho-forensics must be robust.

The apex court in the *Selvi*, a celebrated judgment, holds that the result obtained by impugned tests bears a 'testimonial' character, hence cannot be considered as material evidence.¹³⁰ The technological intervention for deceit recognition during the criminal investigation can be conducted only after explicitly seeking free and informed consent of the subject.¹³¹ The court observed that in procedural law of India the impugned techniques have no mention, but neither there is any statutory prohibition, thus posing evident silence in law. Deception detection tests are an intrusion into the subject's mental privacy, thereby violating the right to privacy and personal liberty under Article 21 of the Indian Constitution. The opinion of a psycho-forensic expert has no admissibility *per se* in the court, however, it may provide some credible leads to investigation for further probe to trail admissible evidence.

Narco-test causes the subject to enter into a hypnotic trance, allowing the scientific experts to gain access to the privacy of the human mind. A legal issue was raised before the High Court of Kerala as to whether the accused has the right to seek himself to be subjected to Narco-analysis.¹³² The accused under section 233(1) of the procedure code upon his defense can adduce any evidence in support of his defense, however, it should not be for the purpose of vexation or delay or for defeating the end of justice as enshrined under section 233(3) of the procedure code. The court dismissed the petition on the strength that findings of the narco-analysis are not admissible, and "... the possibility of accused himself making exculpatory statements to support his defence also cannot be ruled out. There is no mechanism or the present Investigating Agency is also not equipped to assess the credibility of such revelations of the accused".¹³³

The petitioner accused filed a petition before the high court for quashing the order of the court below, by which he was directed unilaterally to face polygraph on request of the investigating agency without taking his consent or giving the opportunity of hearing. The high court quashed the order of the trial court stating that conducting impugned Polygraph without volition of the accused violates the right against self-incrimination. In this case, the high court also set aside the order of the lower court directing the accused to disclose the password of his mobile

129 James D. Harnsberger, Harry Hollien, Camilo A. Martin, and Kevin A. Hollien, Stress and Deception in Speech: Evaluating Layered Voice Analysis" 54(3) *J Forensic Sci*, 642-650 (2009).

130 *Selvi v. State of Karnataka* (2010) 7 SCC 263 at para 262, p. 382 : (2010) 3 SCC (Cri) 1 : 2010 SCC OnLine SC 564 : AIR 2010 SC 1974.

131 *Id.* at para 264.

132 *Louis v. State of Kerala* 2021 SCC OnLine Ker 4519. Also see: *Vipin Kushwaha v. State of M.P.* M. Cr. C. No. 11699/2021 dated 06.09.2021; *Yogesh @ Charu Ananda Chandanev. State of Maharashtra* 2021 SCC OnLine Bom 1054 where the court said, "We must also account for the uses of this technique by persons other than investigators and prosecutors. Narco Analysis tests could be requested by defendants who want to prove their innocence."

133 *Yogesh @ Charu Ananda Chandanev. State of Maharashtra* 2021 SCC OnLine Bom 1054 at para 22.

phone.¹³⁴ The court normally assumes a positive view on a bail application, provided the accused cooperates in revealing the truth of facts during the investigation or give consent for undergoing tests like narco-analysis.¹³⁵ Addressing undue delay in forensic reporting, Delhi High Court is monitoring the status of developing Narco-Test facilities in Delhi.¹³⁶

CCTV and the doctrine of last seen together

CCTV footage provides live commentary related to the chain of events helping identify and role of an individual in an incident.¹³⁷ CCTV inputs are technically digital evidence; hence proper protocol must be observed together with the section 65-B certificate.¹³⁸ The footage further helps to ascertain allegations regarding the accused last seen together with the victim of the crime. In blind cases related to murder or missing person, the last seen theory may provide a clue for further enquiry, but it would be rather hazardous to base conviction on the sole circumstance of 'last seen'.¹³⁹ The last seen together constitutes circumstantial evidence having corroborative strength, which desires for backward and forward linkages with a chain of evidence to prove the impugned fact beyond a reasonable doubt. Further, credible recovery related to the victim under section 27 of the Indian Evidence Act, 1872 such as dead body, belongings like clothes, jewellery, mobile phone etc. may further brace the prosecution case.

Pointing various elements of the last seen together, the court held, "It is trite law that the principle of "last seen" comes into play where the interval between the point of time when the accused and the deceased were last seen alive and when the deceased is found dead is so small that possibility of any person other than the accused being the perpetrator of the offence is ruled out. An interval of the considerable period between two events, namely the deceased being seen alive in the company of the accused and the death of the deceased, gives rise to the possibility of persons other than the accused playing a role".¹⁴⁰ It is no more *res integra* that it is not prudent for the court to base conviction exclusively on the premise of last seen together.¹⁴¹

134 *Virendra Khanna v. State of Karnataka* 2021 SCC OnLine Kar 5032 : (2021) 3 Kar Kant R 455. Also see: *Katelin Eunjoo Seo v. State of Indiana*, 148 N.E.3d 952. The Indian Supreme Court in this case held that compelling an accused to disclose password of his iPhone violates the Fifth Amendment of the US Constitution.

135 *Tikam Singh v. State of Himachal Pradesh* 2021 SCC OnLine HP 4897 at para 15.

136 *Tejbir Singh v. State (NCT of Delhi)* 2021 SCC OnLine Del 664.

137 *Kannan v. State of Kerala* 2021 SCC OnLine Ker 5168; *Ajay v. State (NCT of Delhi)* 2021 SCC OnLine Del 5265; *Lalit Gupta v. State of U.P.* SCC OnLine All 897.

138 *Arjun Panditrao Khotkar v. Kailash Kushanrao Gorantyal* (2020) 7 SCC 1. Also see: *PV Anvar v. PK Baseer* (2014) 10 SCC 473; *Safhi Mohhamadv. State of Himachal Pradesh* (2018) 2 SCC 801.

139 *Sitaram Laxman Dhoom v. State of Maharashtra* 2021 SCC OnLine Bom 6200 at para 26.

140 *Supra* note... at para 27. *Sitaram Laxman Dhoom*. Also see: *State of Goa v. Sanjay Thakran* (2007) 3 SCC 755 at para 34 ; (2007) 2 SCC (Cri) 162; *Dharam Deo Yadav v. State of Uttar Pradesh* (2014) 5 SCC 509 at para 19; *Gargi v. State of Haryana* (2019) 9 SCC 738 at para 33.3; *Rajib Malakar v. State of Tripura* 2021 SCC OnLine Tri 523; *Surajdeo Mahto v. State of Bihar* 2021 SCC OnLine SC 542; *Murugan v. State of Tamil Nadu* (2018) ACR 564 at para 32.

141 *Subash Thapa v. State of Sikkim* 2021 SCC OnLine Sikk 193 at para 23.

VI POLICE AND PROSECUTORAL MISCONDUCT

Shoddy, colourable and casual investigation frustrate the very purpose of evidence gathering.¹⁴² However, defects or lapses as a consequence of a perfunctory investigation by itself cannot be a ground for acquittal. In such situations, there is a legal obligation on the part of the court to examine judiciously the prosecution evidence de hors such lapses, to find out whether the said evidence is reliable or not, and to what extent it is reliable and as to whether such lapses affected the object of finding out the truth. The conclusion of the trial cannot be allowed to depend solely on the probity of investigation.¹⁴³ In *Shaji* case,¹⁴⁴ the high court narrated “Apathy on all fronts conspires to derail investigation and prosecution when the victim is unattached, unconnected and unaligned”.¹⁴⁵ Lapses in evidence collection and its presentation must be distinguished from deceptive and fraudulent tactics used by police and prosecution; and later needs more stringent measures to curb with iron hands.

In various incidents of rape with major victims¹⁴⁶ and in the CSA cases,¹⁴⁷ the DNA was not conducted due to callous attitude. The acquittal was awarded in a rape case where prosecutrix was impregnated, and the DNA report placed on record was neither proved by examining the author nor the prosecutrix or prosecution was given an opportunity to cross-examine the author of the report.¹⁴⁸ Many times police did not bother to conduct DNA of the foetus or baby born to the prosecutrix, and this weaken the prosecution case.¹⁴⁹ Police misconduct is apparent to the extent that the accused demanded conducting DNA of the prosecutrix who was carrying an advanced stage of pregnancy.¹⁵⁰ Cases of misplacing DNA samples by police have also been noticed.¹⁵¹ In a rape case, police did not conduct DNA on the child born to the victim of rape. The request of the prosecutrix to conduct DNA was turned down by the trial court but allowed by the high court. This shows police misconduct and the callous aptitude of the lower judiciary.¹⁵²

In *State of H.P. v. Madan Lal*¹⁵³ a minor girl was sexually abused and pregnancy was terminated. The DNA samples of the prosecutrix, accused and conception was sent

142 *Arvind Kumar v. State of Rajasthan* 2021 SCC OnLine SC 1099 at para 40. Also see: *Kumar v. State represented by Inspector of Police* (2018) 7 SCC 536 : (2018) 3 SCC (Cri) 245 : 2018 SCC OnLine SC 521.

143 *C. Muniappan v. State of Tamil Nadu* (2010) 9 SCC 567 at para 37. Also see: *Ashok Dhavale v. State of Maharashtra* 201 SCC OnLine Bom 648.

144

145 *Shaji v. State of Kerala* 2021 SCC OnLine Ker 2635 at para 1.

146 *Polisetty Kali Varaprasadv. State of U. P.* 2021 SCC OnLine AP 3710 at para 7.

147 *Bal Govind v. State of U. P.* 2021 SCC OnLine All 801 at para 8.

148 *Safina Kouserv. State of J&K* 2021 SCC OnLine J&K 585 at para 6.

149 *State of Maharashtra v. XYZ* 2021 SCC OnLine Bom 6203 at para 16; *Ranjith v. State of Kerala* 2021 SCC OnLine Ker 5116 at para 7.

150 *Reddi Chandra Sekharrao v. State of Andhra Pradesh* 2021 SCC OnLine AP 801 at para 4.

151 *Bharat Gujar v. State of M.P.* 2021 SCC OnLine All 2105 at para 4.

152 *Swapna v. State of Kerala* 2021 SCC OnLine Ker 4187 at para 24.

153 2021 SCC OnLine HP 8133.

for DNA testing. The High Court expressed anguish and despair on the extreme remissness and casual approach in which the prosecution conducted the case. State Forensic Science Laboratory took more than 20 months to prepare a DNA report, and investigating authority made no effort to collect a DNA report and failed to submit it before the court till trial proceedings were completed. In another rape case, despite the higher probability of matching DNA, the report was inconclusive, due to improper preservation of vaginal swab.¹⁵⁴ The high court recorded displeasure about the role of investigating team infalsely implicate a large number of accused in the case.¹⁵⁵

Suicide by hanging of two uterine sisters of age 13 and 9 years, within the span of nearly seven weeks, after repetitive sexual assaults were casually investigated by police causing loss of vital evidence and were poorly prosecuted in courtroom failing to establish the guilt of perpetrator who was the first cousin of deceased's mother.¹⁵⁶ No scientific evidence was collected, resulting in the acquittal of the accused. A blood-stained knife was claimed to be recovered by the prosecution, but neither DNA nor fingerprint was conducted to ascertain the linkage with the perpetrator.¹⁵⁷ DNA report was not taken into account during the trial in *Ashok Kumar*¹⁵⁸ where DNA did not match with accused but it indicated some other male. These reports were present on court records but not marked as exhibits during trial proceedings. The shoddy investigation, prosecutorial misconduct and poor defense, in addition to lackadaisical approach of trial court ended in a conviction during the trial; but was overturned by the high court.

Securing the chain of custody and procedures involved therein during forensic sampling and analysis has great significance for the admissibility of forensic evidence in the court of law. In *Sanjeev Kumar v. the State of H.P.*,¹⁵⁹ it was observed that matching DNA reports in penetrative sexual abuse with minor could not be taken into account during trial proceedings, since the blood sample obtained by investigating agency on FTA card was never sent to the forensic laboratory as per records maintained at the police station. However, the conviction was awarded by the trial court, but overturned by the high court during the appeal.

The court observed that the prosecution could not ascertain that the blood on the knife, the weapon for the crime, was from humans; and DNA could have matched knife blood with the deceased.¹⁶⁰ DNA identified the dead body as the deceased female who was smothered by the acquainted accused after a domestic quarrel. However, the

154 *Mani v. State of Kerala* 2021 SCC OnLine Ker 2817 at para 27.

155 *Jagdish v. State of Madhya Pradesh* 2021 SCC OnLine MP 1485 at para 47. Also see: *Devender Singh v. State of H.P.* 2021 SCC OnLine HP 8754 at para 23.

156 *State of Kerala v. Madhu* 2021 SCC OnLine Ker 58.

157 *State of Bihar v. Prashant Kumar Mehta* 2021 SCC OnLine Pat 732 at para 85 : (2021) 3 BLJ 246 (PHC) : (2021) 2 PLJR 497.

158 *Ashok Kumar v. State represented by the Inspector of Police* 2021 SCC OnLine Mad 1112 at para 67.

159 *Sanjeev Kumar v. State of H.P.* 2021 SCC OnLine HP 5266 at para 4.

160 *Rajan Kumar Bisoi v. State of Orissa* 2021 SCC OnLine 662 at para 23: (2021) 224 AIC 621. Also see:

conviction was reversed by the appellate court since the prosecution failed to establish a case beyond a reasonable doubt. The prosecution as general practice tries to suppress the exculpatory evidence which grossly violates the very ethos of fair trial and state neutrality in adducing evidence.¹⁶¹

Erroneous Judicial Interpretation

Former United States President Theodore Roosevelt said, “No man is above the law and no man is below it; nor do we ask any man’s permission when we ask him to obey it. Obedience to the law is demanded as a right, not asked as a favor.”¹⁶² Police and prosecutorial misconducts are mainly blamed for the failure of criminal cases during the judicial process. However, judicial insensitivity is also a global reality,¹⁶³ but rarely recognized and catalogued in the Indian scenarios due to obvious reasons. Such conduct shatters the trust and confidence of the people in judiciary. Many times, even State is found reluctant to contest against arbitrary and erroneous acquittals, and incapacity of victims due to poor socio-economic conditions compounds silent sufferings of sufferers of crime and their families. Indeed, such insensitivity needs attention and the capacity of all system actors including judges must be built on a periodical basis to address this cult.

*State of Karnataka v. Santosh*¹⁶⁴ is a case of the prosecution having strong evidence to prove the guilt of an accused of the child sexual abuse, and it was desirous of making necessary application to have DNA test conducted since material witnesses had turned hostile on the false promise of the accused. The high court remitted the case back to the trial court to adduce necessary evidence after observing that the “trial Court clearly erred in not permitting the prosecution to lead necessary evidence to prove the guilt of the accused.” It is strange to record that in a case of child sexual abuse with murder, the high court acquitted the accused who was awarded the death penalty by the trial court.¹⁶⁵ It was the explicit case based on corroborative evidence mainly the last seen together, but other forensic evidence could not support the commission of rape. This is a classic example of gross inconsistency in appreciation of evidence during trial and appeal awarding the death penalty and exoneration.

Outlandishly, Sikkim High Court in *Cho Mingur Lepcha*,¹⁶⁶ has overturned the conviction order of the trial court in a case of penetrative sexual abuse with a minor

161 *State of U.P. v. Sachin* 2021 SCC OnLine All 779 at para 16.

162 David J. Sachar, “Judicial Misconduct and Public Confidence in the Rule of Law”, available at: <https://www.unodc.org/dohadeclaration/en/news/2019/08/judicial-misconduct-and-public-confidence-in-the-rule-of-law.html>

163 Evan Bell, “Judicial misconduct”, 35(4) *Common Wealth Law Bulletin* 619-647 (2009).

164 Criminal Appeal No. 414 of 2021, decided on September 03, 2021. Available at: <https://www.sconline.com/blog/post/2021/10/05/rape-kar-hc-guilt-of-the-accused-can-be-established-only-after-examination-of-all-the-witnesses-as-desired-by-the-prosecution-matter-remitted-back-to-adduce-necessary-evidence/>

165 *Sunil v. State of M.P.* (2017) 4 SCC 393 at para 26 : (2017) 2 (Cri) 372.

166 *Cho Mingur Lepcha v. State of Sikkim* 2021 SCC OnLine Sikk 174 at para 3 & 11; para 5.

on trivial technical grounds of updated DNA samples and non-examination of concerned doctor as a witness during the trial, while blatantly ignoring the stark reality of matching DNA with newborn child and accused. It is a befitting case for miscarriage of justice for a minor victim and her child. If there was any ray of doubt, the appellate court could have directed the trial court for reconducting DNA. The apex court has stressed in umpteen cases that trivial technical lacunae in evidence or defective investigation cannot be a ground for awarding an acquittal.¹⁶⁷ The apex court has observed, “Processual law is not to be a tyrant but a servant, not an obstruction but an aid to justice. Procedural prescriptions are the handmaid and not the mistress, a lubricant, not a resistant in the administration of justice”.¹⁶⁸ In *Rajendra Prashad v. Narcotic Cell*, the Supreme Court observed, “Lacuna in the prosecution must be understood as the inherent weakness or a latent wedge in the matrix of the prosecution case... After all, the function of the criminal court is the administration of criminal justice and not to count errors committed by the parties or to find out and declare who among the parties performed better”.¹⁶⁹

In 2021, several judgments from high courts such as ‘Skin to-skin touch’ hit media attention where legal nuances of child sexual abuse were erroneously construed.¹⁷⁰ The acquittal order of the Bombay high court in the *Satish* case was challenged¹⁷¹ and eventually annulled by the apex court.¹⁷² The author of this Survey has deliberated upon these cases and connected issues in his recent article pointing few causative factors for specious legal construction.¹⁷³ In addition to void in the existing law, the lack of clarity on vital facts of a criminal case may also lead to flawed legal hermeneutics resulting in miscarriage of justice. Credible forensic inputs may potentially clear such a cloud of uncertainty in the mind of the court.

VII DISCUSSION

The extant survey has underpinned several vital issues pertaining to the role of forensics in the delivery of justice. The inherent tendency of police to prefer oral witnesses compared to forensic inputs needs attention. On the ground, forensic facilities

167 *Paramjit Singh v. State of Punjab* AIR 2008 SC 441; *Dhanaj Singh v. State of Punjab* (2004) 3 SCC 654 : 2004 SCC (Cri) 851 : 2004 SCC OnLine SC 300. Also see: *Hema v. State Through Inspector of Police, Madras* (2013) 10 SCC 192 : AIR 2013 SC 1000 : 2013 AIR (SCW) 558 : 2013 (1) Crimes 254 : 2013 CrLJ 1011 : 2013 (1) JT 338 : 2013 (1) RCR (Criminal) 869 : 2013 (1) SCALE 242 : 2013 (1) SLT 260 : 2013 (1) Supreme 627.

168 *State of Punjab v. Shamlal Murari* (1976) 1 SCC 719 at para 8 : 1976 SCC (L&S) 118 : AIR 1976 SC 1177 para 8. Also see: *Kushal Jethi v. Ravinder Parihar* 2020 SCC OnLine HP 3631 at para 16.

169 (1999) 6 SCC 110 para 8.

170 *Jageshwar Wasudeo Kawle v. State of Maharashtra*, Criminal Appeal No. 20 of 2020, decided by Nagpur Bench of Bombay High Court on January 14, 2021; *Libnus v. State of Maharashtra* 2021 SCC OnLine Bom 66 : (2021) 2 Bom CR (Cri) 237; and *Satish v. State of Maharashtra* 2021 SCC OnLine Bom 72 : (2021) 2 Bom CR (Cri) 142 : (2021) 1 AIR Bom R (Cri) 773.

171 *Attorney General of India v. Satish* (2021) 4 SCC 712 : 2021 SCC OnLine SC 42.

172 *Attorney General of India v. Satish* 2021 SCC OnLine SC 1076.

173 Also see: GK Goswami and Aditi Goswami, “‘Skin-to-skin’ touch for defining child sexual assault: Interpretational vagaries of the POCSO provisions” SCC J-

are inadequate in terms of experts and equipment causing huge pendency of forensic analysis and undue delay in reporting by the experts. Medical evidence, especially injuries on the genital region, is not *sine qua non* for proving sexual offence, as observed by the apex court, “Even though there was no medical evidence to corroborate the testimony of the prosecutrix, such corroboration is not necessary where the evidence of the prosecutrix was otherwise consistent and stood corroborated by other circumstances and the FIR”.¹⁷⁴ It is worrisome that various stakeholders including judges continued to look for such injuries and marks of her resistance on the person of the prosecutrix. It is a matter of despair that despite explicit instructions for not conducting a two-finger test of the prosecutrix for examining virginity, the medical experts are brazenly continuing it without any deterrence.¹⁷⁵ The persisting riddle of determination of age with reasonable precision continues to be a great forensic challenge and persons between 16 to 18 are most vulnerable both as a victim and accused of the crime.¹⁷⁶ Even the POCSO Act is deficient to provide the solution, consequently, minor prosecutrix suffers on account of defense strategy to establish her as a major and then arguing for indulging in consensual sex, especially when the perpetrator has acquaintance with her.

Over the years, there is a rising trend to order DNA for paternity determination expressly in civil disputes compared to relying upon the conclusive presumption of legitimacy. It must be clear that the use of DNA for paternity determination exclusively for civil disputes is different for paternity enquiry in rape-related pregnancy (RRP). The *Goutam Kundu* guidelines mainly aimed to address paternity claims by DNA tests especially for civil litigations,¹⁷⁷ and in *stricto sensu* not to be applied for the crime. On the other hand, RRP must be seen in the light of sections 53-A and 164-A of the procedure code. The apex court has stressed multiple times that DNA sampling under section 53-A is mandatory in nature,¹⁷⁸ but, in a large number of cases, DNA is not being conducted by police, and the judiciary maintains conspicuous silence on such lapses. Both victim and accused must have some say as a matter of right to point out the glaring faults committed at the time of investigation. This needs academic scrutiny to ponder upon the desired protocol to ensure equity and level playing field between parties concerned during evidence collection.

VIII CONCLUSION

It is a fact that forensic science must and will continue to be applied because it is simply the best reliable way to reconstruct the past through the exploitation of

174 *Wahid Khan v. State of Madhya Pradesh* (2010) 2 SCC 9. Also see: *Ganga Singh v. State of Madhya Pradesh*, (2013) 7 SCC 278; *Mohamamad Ashfaq v. State of Maharashtra* 2021 SCC OnLine Bom 4564 at para 94.

175 *Mohammed Ashfaq Dawood Shaikh v. State of Maharashtra* 2021 SCC OnLine Bom 4564 at para 119. Also see: *Lilu @ Rajesh v. State of Haryana*, (2013) 14 SCC 643.

176 *Jamal Din v. Jamal Ahmed* 2021 SCC OnLine J&K 546 at para 6; *Bharat Chauhan v. State of Chhattisgarh* 2021 SCC OnLine Chh 2691 at para 11.

177 *Supra* note 29.

178 *Supra* note 24. Also see: *Ajoy Biswas v. State of West Bengal* 2019 SCC OnLine Cal 8476 : (2021) 1 Cal Lj 113.

relics of criminal activities. India needs to augment forensic facilities matching with global standards to meet burgeoning statistics of crimes and long-pending investigations and trials. Quality forensic inputs not only corroborate other evidence and circumstances by reconstructing the past, but also bring scientific vigour in the administration of justice. It will reduce unwarranted human discretion in endorsing objectivity in judicial decision making. Forensic intervention deserves a higher pedestal in the administration of justice to counter multi-pronged misconduct. To promote transparency, investigating agencies must compulsorily conduct DNA tests in rape cases barring a few exceptional circumstances. Equally, it is necessary that the integrity and propriety of forensic findings must be free from cognitive biases and police influences to support the prosecution cases. Stakeholders must be trained consistently to understand fine nuances of enabling disciplines of forensics for integrating strategies from crime scene management to judicial decision making, since the culture of forensics is the vehicle for 'validated' justice and harm reduction.

There is a significant dearth of empirical research and scholarship on the internal functioning of forensic science laboratories and varieties of scientific methodologies. Various government agencies must share metadata of crime and forensics for academic deliberations and propping forensic epistemic to bridge theory-practice gaps and strategies for pragmatic solutions. Forensic reasoning must be promoted among various actors of justice.¹⁷⁹ Madhya Pradesh High Court in *Bharat Jatav v. State of Madhya Pradesh*¹⁸⁰ has emphasized for opening Forensic Science University in Madhya Pradesh to strengthen the 'Rule of Law' which must be treated as one of the essential components of infrastructure. The forensic pedagogy ought to be rooted in the theory-practice curriculum for indoctrinating "domain knowledge, justification skills, science attitudes, and regulation of cognition".¹⁸¹ The interplay between the National Educational Policy and inter-disciplinary research among various fields of justice administration is desired. It is imperative that the investigative, epidemiological, court and social functions of forensic science can be fully exploited to society's benefit.¹⁸² Forensic science is an applied but ever-growing discipline, which must strive for richness. The issue of 'junk science in the courtroom', errors, inconsistency and inefficacy in the decision-making process must be dealt with seriously.

Inherent ambiguity in law in addition to a deficiency in the probity of evidence further breeds inconsistencies in judgments. The Chief Justice of India has lamented

179 Mike Illes, Paul Wilson and Cathy Bruce, "Forensic epistemology: A need for research and pedagogy" *Forensic Science International: Synergy* 51-59 (2020); Mike Illes, Paul Wilson, Cathy Bruce, "Forensic epistemology: testing the reasoning skills of crime scene experts" 52(4) *Can. Soc. Forensic. Sci. J.* 151-173 (2019); Mike Illes, Paul Wilson, Cathy Bruce, "Forensic epistemology: exploring case-specific research in forensic science" 53(1) *Can. Soc. Forensic. Sci. J.* 26-40 (2020).

180 2021 SCC OnLine MP 1781 at para 8 : 2021 SCC OnLine MP 2111.

181 Namsoo Shin, Davvid H. Jonassen, Steen McGee, "Predictors of well-structured and ill-structured problem solving in an astronomy simulation", 40(1) *J. Res. Sci. Teach.* 6-33 (2003).

182 *Supra* note 1 at 5.

the "sorry state of affairs" and fallen standards of law-making over the years, triggering litigation, and causing inconvenience to citizens, courts and other stakeholders.¹⁸³ Indian Parliament must promote the culture of debates and public participation in the process of law-making. Specialisation in higher judiciary needs to be encouraged, and there must be well-conceived schemes to capacitate the justices irrespective of their rank and profile. Establishing a National Judicial Academy for higher judiciary may be a befitting solution. Overall, law and executing machinery must be well equipped and dynamic to serve the expectations of a versatile and diverse society like India.

183 Krishnadas Rajagopal, "Chief Justice of India rues 'sorry state of affairs' in lawmaking" *The Hindu*, August 15, 2021. Available at: <https://www.thehindu.com/news/national/chief-justice-of-india-rues-sorry-state-of-affairs-in-lawmaking/article35921989.ece>